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An Assessment of the determinants of portfolio performance of Investment groups in Kenya

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An Assessment of the Determinants of Portfolio Performance of Investment Groups in Kenya

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DECLARATION

I declare that this thesis is my original work and has not been presented to any other university for a ward of a degree. Any work done by other people has been duly acknowledged. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person. It has been examined by a board of Examiners of the Strathmore University

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APPROVAL

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ABSTRACT

The purpose of this study is to assess the determinants of portfolio performance of investment groups in Nairobi County of Kenya. The five specific objectives were addressed. The first specific objective was to assess the influence of asset allocation on portfolio performance of investment groups in Nairobi County of Kenya. The second specific objective was to assess the influence of market timing on portfolio performance of investment groups in Nairobi County of Kenya. The third specific objective was to assess the influence of security selection on portfolio performance of investment groups in Nairobi County of Kenya. The fourth specific objective was to assess the influence of gender composition of the management team on portfolio performance of investment groups in Nairobi County of Kenya. The fifth specific objective was to assess the influence of size of membership on portfolio performance of investment groups in Nairobi County of Kenya. This study employed a descriptive research design. The target population was 148 investment groups in Nairobi County of Kenya registered with KAIG. A sample of 96 investment groups was drawn from the population using systematic sampling. Data was collected using a questionnaire. Descriptive statistics, correlation analysis and multiple regression analysis were used to analyse the data. To be more precise, asset allocation, market timing and security selection, gender composition of the management team and size of membership were the independent variables and portfolio performance was the dependent variable. The study found that asset allocation policy, security selection and size of membership were the only significant determinants when explaining the performance of investment groups. In addition, market timing and gender composition of the management team were found to be insignificant. The finding of this study suggest that investment groups ought to invest in index funds mainly comprised of treasury bills unless the management team has the necessary skill to realize high risk adjusted return from investments. Investment groups ought to start with a small size of membership and increase group size steadily to maintain group coordination and motivation of current members.

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LIST OF ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
DW	Durbin Watson Statistic
EMH	Efficient Market Hypothesis
IG	Investment Group
KAIG	Kenya Association of Investment Groups
MPT	Markowitz Portfolio Theory
NSE	Nairobi Securities Exchange
OLS	Ordinary Least Squares Method
SPSS	Statistical Program for Social Science
LM	Lagrange Multiplier Test

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DEDICATION

I dedicate this study to my family, my mum Felister, dad Andrew and brother Chris for their love and unwavering support, both financial and emotional. Your support and kindness will not be forgotten. I also would like to dedicate this study to all the investment groups in Kenya and globally for the role they play in building the economy of a nation and strengthening bonds between people within a society.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Numerous attempts have been made in literature to identify the determinants of portfolio performance (Brinson, Hood & Beebower, 1986; Jahnke, 1997; Ibbotson & Kaplan, 2000). As the interest in identifying the determinants of portfolio performance continues to increase both in the developed and developing nations, there have been different opinions as to what determinants significantly influence the portfolio performance (Amunga, 2015). Brinson et al. (1986) concluded that a portfolio's fixed asset allocation policy was the most significant determinant of portfolio performance while other factors including market timing and security selection played minor roles in explaining portfolio return and volatility over time. While a number of scholars and practitioners are strongly persuaded that a portfolio's fixed asset allocation was the most significant determinant of portfolio performance, there are opponents to this view who are inspired by William W. Jahnke (Ibbotson & Kaplan, 2000).

Jahnke (1997) argued that the conclusion made by Brinson et al. (1986) overlooks the differences in portfolio returns among investors. A portfolio may have a different portfolio return at the end of the investment horizon depending on which investments were chosen. To be more precise, Brinson's approach might indicate that the change in return of two portfolios, each with a portfolio composition of 60% stocks and 40% bonds, is explained mainly by their asset allocation policy. However, the Brinson methodology overlooks the possibility that that these two portfolios can have very different total returns due to the active decisions made in each portfolio and the costs associated with implementing those decisions (Tokat, Wicas & Kinniry, 2006). Jahnke's argument became a basis for institutional investors' contention that active management (market timing and security selection) was more important than reviewing asset allocation policies because they could quantify the benefits of superior management (Bernstein, 1987; 2003)

Other researchers such as Ibbotson and Kaplan (2000), and Xiong, Ibbotson, Idzorek, and Chen (2010) challenged aspects of the study done by Brinson et al. (1986). The primary disagreement relates to the manner in which asset allocation was defined by Brinson's study, stating the term was used in an all-encompassing manner including both the effect of market movement in the underlying asset class and decisions made by the portfolio manager. The conclusion in studies done by Ibbotson and Kaplan (2000), and Xiong et al. (2010) was that roughly three-quarters of portfolio return is attributable to market movement, with the remaining amount equally attributable to investment strategy and security selection.

Behavioral economics evidence suggested that male dominated management teams and female dominated management teams possessed differing strengths and weaknesses with respect to the requisite skills for investment management (Croson & Gneezy, 2009). Barber and Odean (2001) found that with respect to trading strategies, male dominated management teams were more overconfident than female dominated management teams; trading stock as much as 45 percent more than female dominated management teams. Being overconfident, male dominated management teams made more trades that resulted in lower returns once transaction costs were incorporated. However, most studies indicated that women were more risk averse than men and earned less portfolio returns than men (Powell & Ansic, 1997; Jianakoplos & Bernasek, 1998)

Previous research has also suggested that the size of membership in a group can affect portfolio performance. Littlepage (1991) found that the difficulty of organizing and coordinating operations increases as the size of an investment club grows. Simultaneously, the addition of members to an investment club brings the value of more insight and experience to an investment club (Littlepage, 1991). To be precise, the benefit of experience and insight gained from increasing group size is counteracted by the loss of group coordination. Group coordination is lost when a group exceeds ten members. The increase in the size of a group reduces the level of contribution by existing members which may demotivate existing members (Littlepage, 1991).

Several explanations for the apparent inconsistency in findings have been advanced including both methodological and theoretical issues (Fielitz & Muller, 1983; Brinson, Singer & Beebower, 1991). Some researchers have noted the inconsistency to be caused by difference

in selecting methodology e.g. quantitative vs. qualitative, and regression (Stevens, Surz & Wimmer, 1999; Sharpe, 1991). Other scholars cited the lack of a sound theoretical foundation (Goetzmann & Ibbotson, 1994; Jahnke, 1997);, the inconsistency of defining and measuring the constructs of interest – asset allocation policy, security selection, market timing, gender composition of the management team, size of membership and portfolio performance (Ibbotson & Kaplan, 2000), as well as the use of unspecified models due to omitted variables and a lack of consideration of moderating or mediating influences (Tokat et al., 2006). The difference in geographical scope in which different studies are conducted presents another inconsistency. Liu (2005) argues that most studies on the determinants of portfolio performance have been concentrated in developed countries and that this limits the opportunity to generalize results as the asset allocation policies and manager selection processes vary globally. Liu (2005) proposed that research in this area would benefit immensely from input from developing countries as most of these countries are vulnerable economies that are largely dependent on portfolio performance to maintain development of these nations.

The differences in measurement of portfolio performance presents another source of inconsistency in the findings on the determinants of portfolio performance as there is little consensus about which measurement instrument to apply (Shahid, 2007). Some researchers use time-weighted rate of return (Brinsol et al., 1986; Ibbotson & Kaplan, 2000); others used value weighted rate of return (Jahnke, 1997) while others used risk-adjusted performance indices such as the Jensen Index (Shahid, 2007; Ibbotson et al., 2010). The use of different portfolio performance measures has different theoretical implications and complicates the comparison of the results of different studies and each is subject to particular biases (Shahid, 2007).

Identifying the determinants of portfolio performance is further complicated by the fact that most studies have concentrated on the portfolios of pension funds. According to Oluoch (2013) pension funds in both developed and developing nations have a defined asset allocation policy by regulators thus limiting the opportunity to generalize results to informal investment groups, popularly known as Chamas, who have more flexibility in their asset allocation policies. Icharia (2014) noted that the investment group drive was prevalent in

developed and developing countries and aided greatly to bigger spending and low savings during housing and stock market booms. According to Kibue (2013), the high standards of living and insecurity of employment highlighted the need for wealth creation thus facilitating the growth of Chamas in Kenya. However, the growth of Chamas is not sustainable as noted by Gichuru (2014) that many Chamas are not thriving since they collapse within their first year of operation. If this trend of failure in such investment groups in Kenya persists then the growth observed in Chamas will decline and eventually cease. Oluoch (2013) proposes that research in determinants of portfolio performance would benefit immensely from input from Chamas as most of these groups have more flexibility with regards to their asset allocation policies than pension funds thus enriching the study when determining the influence of asset allocation policy on portfolio performance.

These inconsistencies justify the need for a study that incorporates multiple determinants to reflect a more comprehensive analysis of portfolio performance of Chamas. This study unlike most studies which advocate for asset allocation policy, market timing and security selection (Brinson et al, 1986, Xiong et al., 2010) introduced gender composition of the management team and size of membership as independent variables in an attempt to explain portfolio performance of Chamas. Furthermore, this study examined the cross-sectional dispersion of total returns rather than a time-series analysis of portfolio returns which is evident in most studies (Brinson et al, 1986, Xiong et al., 2010). Jahnke (1997) claimed that the change in the total return of a portfolio over time was not significant to investors. Investors were concerned about actual returns and the range of possible security returns at the conclusion of their time horizons. A focus on cross-sectional data on the total return of different portfolios rather than the variation of the return of a single portfolio over time helps assess whether asset allocation policy, security selection, market timing, gender composition of the management team and size of membership contribute to the over-performance or underperformance of the portfolio of a Chama.

1.2 Statement of the problem

Chamas in Kenya are steadily growing as there are several informal investment groups that have invested in different industries such as transport, agriculture and real estate (Kibue, 2013). However, the growth of such investment groups is not sustainable since Gichuru

(2014) noted that many Chamas that are not thriving collapse within their first year of operation. The reasons for this failure include lack of proper guidance in investing by investment groups and lack of managerial skills by the management team brought about by lack of diversity in gender composition of the management team, conflict among members on the management of the Chamas brought about by increased size of membership and differences over investment strategies and risk appetite in the management team of a Chama brought about by lack of a defined asset allocation policy. If this trend of failure in Chamas in Kenya persists then the growth observed in such investment groups will decline and eventually cease. In addition, research on the performance of Chamas in Kenya is still low, lacking in completeness, uniformity and reliability (Icharia, 2014).

At the core of the debate on the portfolio performance of Chamas is a fundamental question: What are the determinants of portfolio performance of Chamas? Clearly confirmed determinants of portfolio performance have proved elusive (Tokat et al., 2006). Numerous scholars have examined this proposition, primarily with a focus on conceptualizing, specifying, and testing determinants of portfolio performance and the results have been mixed (Ibbotson & Kaplan, 2000). Most of the existing studies on the determinants of portfolio performance have concentrated on developed nations with only pockets of research found in developing nations such as Malaysia (Khim, 2008), India (Kishori & Kumar, 2016) and Nepal (Kadariya, 2012). Studies on the determinants of portfolio performance in Kenya have even been more limited mainly focused on the determinants of portfolio performance of unit trusts in Kenya (Kasanga, 2011) and determinants of pension fund performance in Kenya (Oluoch, 2013). Liu (2005) argues that the lack of sufficient research on the determinants of portfolio performance limits the opportunity to generalize results as the asset allocation policies, gender composition of the management team, size of membership, market timing and security selection processes vary globally.

Chamas have an inherent interest of improving portfolio performance as their ability to grow and prosper is dependent on attaining high risk adjusted returns from their portfolios (Edwin & Martin, 2011). However, the efforts of Chamas are very fragmented and much disorganized creating wealth significantly below potential (Icharia, 2014). There is therefore a need to provide further empirical evidence on the determinants of portfolio performance to

determine whether chamas in Kenya which manage these determinants well outperform the market or underperform when compared to the market return.

1.3 Objectives of the research

1.3.1 General objective

The general objective of this study is to assess the determinants of portfolio performance of investment groups in Nairobi County of Kenya.

1.3.2 Specific objectives

1. To assess the influence of asset allocation on portfolio performance of investment groups in Nairobi County of Kenya.

2. To assess the influence of market timing on portfolio performance of investment groups in Nairobi County of Kenya.

3. To assess the influence of security selection on portfolio performance of investment groups in Nairobi County of Kenya.

4. To assess the influence of gender composition of the management team on portfolio performance of investment groups in Nairobi County of Kenya.

5. To assess the influence of size of membership on portfolio performance of investment groups in Nairobi County of Kenya.

1.4 Research questions

1. What is the relationship between asset allocation and portfolio performance of investment groups in Nairobi County of Kenya?

2. What is the relationship between market timing and portfolio performance of investment groups in Nairobi County of Kenya?

3. What is the relationship between security selection and portfolio performance of investment groups in Nairobi County of Kenya?

4. What is the relationship between gender composition of the management team and portfolio performance of investment groups in Nairobi County of Kenya?

5. What is the relationship between size of membership and portfolio performance of investment groups in Nairobi County of Kenya?

1.5 Scope of the study

The scope of this study was limited to Chamas in Nairobi County of Kenya over a period of one year 2016. The choice of chamas in Nairobi County is preferred because most of the chamas that failed within their first year of operation were located in Nairobi County (Gichuru, 2014). The choice of a cross-sectional study is justified by the argument of Jahnke (1997) who claimed that the change in the total return of a portfolio over time was not significant to investors. Investors were concerned about actual returns and the range of possible security returns at the conclusion of their time horizons. The choice of one year 2016 is justified by the fact that chamas did not maintain proper records which would have facilitated more data for previous periods.

The study tested the relationship between asset allocation policy, market timing and security selection, gender composition of the management team and size of membership as the independent variables, and portfolio performance as the dependent variable. The study targeted the management team of a Chama as they manage the portfolio of the Chama and are evaluated based on the performance of the portfolio. In addition, the management team is tasked with increasing the portfolio value of the Chama and strengthening the bond between members (Nicholson & O'Hara, 1968).

1.6 Significance of the study

Given the significant role investment performs in maintaining development of any nation, and the recognition of the growth of Chamas into financial machines that have initiated multi-billion-shilling projects in various sectors of the economy, this study is a response to the invitation by Icharia (2014) to document investment groups (Chamas) in Kenya. This study assessed which determinants of portfolio performance are significant in explaining the performance of Chamas in Nairobi County of Kenya. This helps determine if Chamas which focus on their asset allocation policies, market timing, security selection realize higher risk adjusted returns from their portfolios or not. In addition, this helps determine whether Chamas which focus on the gender composition of the management team and size of membership realize higher risk adjusted returns from their portfolios or not.

A portfolio's fixed asset allocation policy was the most significant determinant of portfolio performance while other factors including market timing and security selection played minor roles in explaining portfolio return and volatility over time (Brinson et al., 1986). However, the change in opportunities to invest over time means that it would be beneficial for an investor to manage the portfolio actively and engage in market timing and security selection with the aim of attaining a higher return than a portfolio with a static asset allocation policy (Jahnke, 1997). Such contrasting views indicate that clearly confirmed determinants of portfolio performance have proved elusive. Findings of this study contribute to the academic discourse on determinants of portfolio performance by assessing the relationship between asset allocation policy, market timing and security selection, gender composition of the management team and size of membership as the independent variables, and portfolio performance as the dependent variable.

Findings of this study may be used to guide governments, professional and regulatory bodies such as the Kenya Association of Investment Groups (KAIG) in the development of educational seminars to provide timely, readily accessible and reliable information on portfolio management and performance to satisfy the interests of stakeholders. This will give a level of prominence to portfolio costs, benefits, and reduce the rate at which such investment groups fail within their first year of operation. The rest of the chapters are organized as follows; Chapter 2 presents the literature pertinent to the study, Chapter 3 presents the methodology used, Chapter 4 presents the research findings and Chapter 5 presents the discussion of the findings, conclusions of the study, limitations of the study, implications of the stud and recommendations for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This Chapter examines the historical context of research findings on the determinants of portfolio performance of chamas. Section 2.2 provides the theoretical framework on which the study is grounded. Four theories: Markowitz Portfolio Theory, Efficient Market Hypothesis, Social Facilitation Theory and The Expectation-States Theory are defined and their relevance to the study. A conceptual analysis of the determinants of portfolio performance and the portfolio performance of investment groups in Kenya is presented in section 2.3. Section 2.4 outlines a review of previous studies on the relationship between asset allocation policy, market timing and security selection, gender composition of the management team and size of membership as the independent variables, and portfolio performance as the dependent variable and the study's hypothesis developed from the literature. Section 2.5 provides the conceptual framework of the research. Section 2.6 provides a summary of this chapter.

2.2 A Theoretical Review of Literature on the Determinants of Portfolio Performance

Research on the determinants of portfolio performance has been based on several theoretical arguments, with a tendency to herd around portfolio management theories (Leroi, 2009). This is grounded on the argument that the aim of making of an investment is to attain the maximum return at the lowest level of risk (Leon, Nave & Rubio 2005). The choice of an appropriate theory in studying determinants of portfolio performance is significant because a theory is a framework that influences the way we perceive the meaning of portfolio performance and the determinants of portfolio performance (Leon et al., 2005). The theories that will guide the study are Markowitz Portfolio Theory, Efficient Market Hypothesis, Social Facilitation Theory and The Expectation-States Theory.

2.2.1 Markowitz Portfolio Theory

Markowitz Portfolio theory (MPT) has been used to study the concept of portfolio performance and if there are any associations and relationships between the asset allocation policy of an investment group and portfolio performance. Some studies reported that asset

allocation policy was a significant determinant of portfolio performance (Brinson et al, 1986, Brinson et al, 1991); others reported that asset allocation was not a significant determinant of portfolio performance (Jahnke, 1997; Ibbotson & Kaplan, 2000). The main point of discussion in this debate has been if the asset allocation decision is significant when explaining return variability over time, holding period portfolio returns and cross-sectional returns. Jahnke (1997) observed that the change in the total return of a portfolio over time is not significant to investors. Investors are concerned about actual returns and the range of possible security returns at the conclusion of their time horizon.

Markowitz Portfolio theory states that the optimum portfolio is a portfolio all of the risky investments. The advantages of diversification rely more on how the investments behave comparative to one another rather than the sum of investments in a portfolio. The lesser the associations amongst them, the more the risk can be reduced by possessing the correct combination of risky investments (Markowitz, 1952).

Elton and Gruber (2011) propose that all investors desire to participate in the successful mixture of investments. An optimal portfolio is one that provides either the maximum anticipated return for a particular degree of risk or the smallest degree of risk for a known anticipated return. The efficient frontier signifies the collection of portfolios that have the highest projected return for each known degree of risk. No portfolio on the efficient frontier is superior to another. Based on the financier's risk acceptance, the financier selects hypothetically one, and only one, proficient portfolio on the frontier (Markowitz, 1952).

According to Hensel, Ezra and Ilkiw (1991) the asset allocation policy is not a significant determinant of portfolio returns if a portfolio has a diversified mix. However, the asset allocation policy was a significant determinant of total portfolio return if the portfolio is mainly composed of treasury bills investments. In addition, an investor who bases portfolio return on the asset allocation decision ought to invest in index funds only so as to realize the maximum anticipated return for a particular degree of risk (Ibottson & Kaplan, 2000). If MPT holds, then market timing and security selection are significant determinants of portfolio performance.

2.2.2 Efficient Market Hypothesis

Another theory which was employed in studying the concept of portfolio performance and determining whether there is an association between asset allocation policy, market timing and security selection as the independent variables and portfolio performance as the dependent variable is the efficient market hypothesis (EMH). Some studies (Brinson et al., 1986; Brinson et al., 1991) reported that a fixed asset allocation yields higher risk adjusted returns than actively managing the portfolio (relying on market timing and security selection). However, other studies (Jahnke, 1997; Hensel et al., 1991) argued that it is better for an investment group to actively manage the portfolio (relying on market timing and security selection) to earn better returns than a fixed asset allocation policy.

The Efficient Market Hypothesis (EMH) states that all public and private information about securities is reflected in the prices of securities (Fama, 1970; Dimson & Mussavian, 1998). Security prices are also denoted to follow a random pattern hence investors cannot foretell future prices of securities (Sewell, 2011; Husain, 1997). If the Efficient Market Hypothesis exists then a static target asset allocation policy would yield higher returns at a lower transaction cost than actively managing a portfolio. In such a situation, investment groups are better placed investing in passive index funds.

Studies which criticize the impact of a static target asset allocation policy on portfolio performance also criticize the EMH and random walk hypothesis by arguing that investors over react or underreact to information in the stock market (Aduda & Muimi, 2011). This means that investors may be overly pessimistic or optimistic depending on the temperament. However, Malkiel (2003) argues that investors will not yield better portfolio returns due to the overreaction or under reaction of investors because the market is efficient. Contrary to this, fund managers and investment groups have yielded better portfolio returns than the return of the market index (Okoth, 2005). Okoth (2005) observed that investors yielded better portfolio returns than the market index due to the overreaction and under reaction of investors in the NSE by using a contrarian approach. Such anomalies have led some scholars to claim that efficient markets have no place in reality. Kalunda & Mbalunda (2012) concluded that the efficient market hypothesis holds in an ideal world. Investment groups which engage in market timing and security selection ought to have a management team that

is able to predict security prices to be able to attain higher risk adjusted returns than a portfolio whose asset allocation policy is based on a market benchmark. If EMH holds, the asset allocation policy is a significant determinant of portfolio performance.

2.2.3 Social Facilitation Theory

Social Facilitation Theory has been used to study the concept of portfolio performance and if there is any relationship between the size of membership of an investment group and portfolio performance. Social facilitation theory states that the mere presence of others creates arousal, which intensifies the probability that the main response will occur. If the dominant response is correct, the task is performed better, whereas if the main response is incorrect, the task is performed more poorly (Guerin, 1983). Zajonc (1965) argued that if the task to be done was quite easy, or if the individual had learned to do the task very well, the main response was the correct response, and the increase in arousal caused by the presence of others would increase portfolio performance. In contrast, if the task was hard or not well studied, the main response was the incorrect one; and because the rise in arousal would increase the occurrence of the (incorrect) main response, portfolio performance would drop. Investment groups generally face tasks that can be described as high-difficulty, so learning when to increase or decrease size of membership is crucial to prevent a drop in portfolio performance (Zaconj, 1965). If Social Facilitation Theory holds then size of membership is a significant determinant of portfolio performance.

2.2.4 The Expectation-states Theory

The Expectation-states theory has been used study the concept of portfolio performance and if there is any relationship between the gender composition of the management team and portfolio performance. The shared focus of group members on the group's objective creates a pressure to predict the relative quality of each member's input to finishing a task in the group so as to decide how to proceed (Berger, Cohen, & Zelditch, 1972; Berger, Rosenholtz, & Zelditch, 1980). These predictions of the relative quality of each member’s future performance in a particular task in the group are referred to as performance expectation states (Berger, et. al., 1972; Berger, et. al., 1980). Once created, performance expectation states mold behavior within the group (Berger, et. al., 1972; Berger, et. al., 1980). The better the performance expectation of one group member related to another, the more probable the first

actor will be given chances to perform in the group (Berger, et. al., 1972; Berger, et. al., 1980). The actor with the lower performance expectations will be offered less chances to perform and will say less and in a more cautious manner (Eagly & Wood, 1982). The inputs of the second member will be overlooked or poorly assessed and this member will be more swayed when disputes arise (Eagly & Wood, 1982). Women are deemed to have lower expectation states than men in groups. As a result, men are more active in managing a portfolio and yield higher portfolio returns than women. However, engaging in unrestricted market timing and security selection could yield lower portfolio returns for a male dominated management team than the portfolio returns of a female management team (Barber & Oden, 2001). Gender composition of the management team is therefore a significant determinant of portfolio performance.

2.3 Conceptual Analysis of the value of determinants of portfolio performance

The management team of an investment group who are tasked with strengthening the common bond between members and meeting the financial goals of the group can no longer ignore the effect of several determinants of portfolio performance such as asset allocation policy, market timing and security selection, gender composition of the management team and size of membership (Liu, 2005). The effect of these determinants of portfolio performance and the involvement of the management team of investment groups is becoming a topic of discussion by investment groups across the world. The management team is therefore expected to take a proactive approach in understanding the relationship between asset allocation policy, market timing and security selection, gender composition of the management team and size of membership as the independent variables, and portfolio performance as the dependent variable.

The important role of determinants of portfolio performance lays ground for regarding asset allocation policy, market timing and security selection, gender composition of the management team and size of membership as indicators of an investment club's commitment to ensure the profitability, continuity and success of investment groups. Prior research has shown that investment groups which demonstrate effective management of such determinants carry specific benefits (Tokat et al., 2006; Xiong et al., 2010; Littlepage, 1991).

The benefit of creating diversity in the gender composition of the management team is that the possibility of groupthink, group polarization and overconfidence of the management team stresses the importance of healthy conflicts and different opinions in yielding high risk-adjusted portfolio returns (Bowers, Pharmer, & Salas, 2000). In addition, the benefit of maintaining the right size of membership in a club is that the club not only brings in the required expertise and knowledge on investment into the club but also prevents loss of group coordination which results in poor portfolio performance (Littlepage, 1991). The right asset allocation decision can yield a high portfolio return at a low cost depending on the degree of active management. Market timing and security selection can potentially lead to a high portfolio return if the management team of the investment club is skilled at selecting investments and market positioning (Leon, Nave & Rubio, 2005).

2.3.1 Portfolio performance of investment groups (Chamas) in Kenya

The investment groups drive stretched all over Europe, Northern America, Latin America, and Asia from 1900 to 1930. According to several papers, the rise in wealth of U.S. households caused by the housing and stock market booms during the 1990s and early 2000s aided considerably to bigger spending and low savings during this period (Icharia, 2014; Gichuru, 2014). Chamas in Kenya are steadily growing as there are several informal investment groups that have invested in different industries such as transport, agriculture and real estate (Kibue, 2013). However, the growth of such investment groups is not sustainable since Gichuru (2014) noted that many Chamas that are not thriving collapse within their first year of operation. The reasons for this failure include conflict among members on the management of the Chamas brought about by increased size of membership and differences over investment strategies and risk appetite in the management team of a Chama brought about by lack of a defined asset allocation policy. If this trend of failure in Chamas in Kenya persists then the growth observed in such investment groups will decline and eventually cease.

Bodie, Kane and Marcus (2008) indicated that the expected return of a portfolio is the weighted average of the expected returns of investments in a portfolio with the investment proportions as weights. It has been noted that chamas do not keep proper records which would have been necessary for analyzing the performance trend of investment groups

(KAIG, 2016). Identifying the determinants of portfolio performance of Chamas is further complicated by the fact that most studies have concentrated on the portfolios of pension funds. According to Oluoch (2013) pension funds in both developed and developing nations have a defined asset allocation policy by regulators thus limiting the opportunity to generalize results to informal investment groups, popularly known as Chamas, who have more flexibility in their asset allocation policies. In addition, research on the performance of Chamas in Kenya is still low, lacking in completeness, uniformity and reliability (Icharia, 2014). Research on Chamas is focused on factors that influence wealth creation among investment groups and strategic planning in investment groups (Icharia, 2014; Gichuru, 2014). As a result, it can be inferred that there is need to examine the portfolio performance of investment groups in Kenya.

2.4 Determinants of Portfolio Performance

Past researchers have found different results on the determinants of portfolio performance. The key debate in existing literature is whether asset allocation policy or actively managing a portfolio by using market timing or security selection is the most significant determinant of portfolio performance. Diversity in terms of gender is another area that requires further research attention, especially in light of the push toward a more balanced representation of men and women and the growing integration of men and women in the management teams of investment groups (Jackson, 1992). Size of membership is also an area that demands further research attention due to conflict among members on the management of the investment groups (Gichuru, 2014).. The literature on these determinants of portfolio performance will be deliberated further in this section.

2.4.1 The Effect of Asset Allocation Policy on Portfolio Performance

The study by Brinson et al. (1986) analyzed the results for 91 large pension plans in the United States over a time period of 10 years from 1974 to 1983. They analyzed whether a portfolio's asset allocation policy significantly affects portfolio performance. The finding of this study was that a portfolio asset allocation policy accounts for over 90% of the variation in the portfolio returns over time. A similar study conducted by Blake, Lehmann and Timmermann (1999) on more than 300 pension funds in the United Kingdom over a time period of 8 years from 1986 to 1994 arrived at the same conclusion as Brinson et al. (1986).

Tokat et al. (2006) also used Brinson's model to analyze 420 balanced mutual funds in the United States over a time period of 40 years from 1962 to 2001 and the Mercer Pooled Fund Survey of balanced mutual funds in Australia over a time period of 10 years from 1994 to 2003. This study compared the performance of each fund to its corresponding return of its benchmark. The findings of this study supported the conclusion by Brinson et al. (1986) which was that an asset allocation policy accounts for 77% of the short-term variation in portfolio return over time. However, the return from each mutual fund was dependent on the level of active management (reliance on market timing and security selection). If a mutual fund implements its investment strategy by using index funds and adjusts the asset allocation to match the market benchmark then the mutual fund will yield a higher return than a mutual fund which has a high degree of market timing and asset allocation.

In the same study by Tokat et al. (2006) they found that funds which employed market timing and security selection at a high degree yielded lower returns over time. This finding is consistent with the study done by Jensen (1986) on 115 mutual funds over a time period of twenty years from 1945 to 1964 who observed that the performance of mutual funds selected through the prediction of security prices did not outperform funds with a static target asset allocation policy. This finding is also consistent with the study with the argument of Arshanapalli, Coggin and Nelson (2001) who observed that a static target asset allocation policy is a shrewd choice since a dynamic asset allocation policy requires the ability to predict security prices effectively in order to outperform the static target asset allocation policy. The most recent study in support of this argument is by Annaert, Ceuster and Hyfte (2002) who focused on portfolios which comprised of international investments and multiple-asset investment strategy. The finding was that lack of in-depth knowledge in international markets resulted in lower returns in groups which engaged in market timing and security selection as compared to portfolios with a static target asset allocation policy.

While a number of scholars and practitioners are strongly persuaded that that a portfolio's fixed asset allocation was the most significant determinant of portfolio performance, there are opponents to this view who are inspired by William W. Jahnke (Ibbotson & Kaplan, 2000). This led to criticism of having a static target asset allocation policy. A study conducted by Hensel, Ezra and Ilkiw (1991) on seven Russell Investment Company mutual

funds in the United States of America concluded that asset allocation is not a significant determinant of portfolio performance if the portfolio has a diversified mix of assets. However, Hensel et al. (1991) also concluded that a static target asset allocation policy was significant in determining the returns of a portfolio which mainly comprised of Treasury bills and notes.

Jahnke (1997) responded to the findings by Brinson et al. (1986) by analyzing the results of Brinson's sample of 91 pension funds in the United States to determine whether asset allocation policy has a significant influence on total returns of those funds rather than variability of return over time. Jahnke (1997) claimed that the change in the total return of a portfolio over time was not significant to investors. Investors are concerned about actual returns and the range of possible security returns at the conclusion of their time horizons. Jahnke's approach is to examine the cross-sectional dispersion of total returns, that is, the range of returns produced by a group of portfolios over a particular time period. Jahnke (1997) concluded that a static target asset allocation only accounts for 15% of the range in actual holding period returns. This finding was also observed by Ibottson and Kaplan (2000) who concluded that an asset allocation policy only accounts for a minor role in explaining portfolio performance. However, an investor who bases portfolio return on asset allocation ought to invest in index funds only. Furthermore, Ibottson and Kaplan (2000) stated that a static target asset allocation policy is less significant when explaining portfolio performance because the mix of asset classes in portfolios of mutual funds and pension funds are similar.

Although the results are mixed, studies where a portfolio based on a fixed asset allocation policy yield better returns than an actively managed portfolio are predominant and it would thus be expected that investment groups would seek to implement its investment strategy by using index funds and adjusts the asset allocation to match the market benchmark. Therefore, the hypothesis to be empirically tested is the following:

H_1 – A portfolio based on a fixed asset allocation policy yields better returns than an actively managed portfolio.

2.4.2 The Effect of Market Timing on Portfolio Performance

A strong argument by Jahnke (1997) was that there was no empirical evidence to justify the adoption of a static target asset allocation policy in the long-term when the expected returns vary over time for an investor. The change in opportunities to invest over time means that it would be beneficial for an investor to manage the portfolio actively and engage in market timing with the aim of attaining a higher return than a portfolio with a static target asset allocation policy. A study conducted by Hensel et al. (1991) on seven Russell U.S. Pension Plans arrived at the same conclusion. The argument was that a static target asset allocation was not as significant as indicated by Brinson et al. (1991) when explaining portfolio returns and justified the adoption of an active management strategy to enhance portfolio performance.

Anson (2004) took a different approach to justify the significance of market timing when explaining portfolio performance. He argued that a portfolio with two asset classes generates the asset allocation decision beta drivers and the alpha drivers. Beta drivers originate from the asset allocation policy and provide an extensive economic exposure to the financial markets. An example of such a policy would be a 60/40 split in stocks and bonds in terms of asset allocation with a specific risk tolerance. To be precise, the performance of beta drivers is similar to the performance of a market index that has no active risk or a static asset allocation policy. The alpha drivers tend to provide return beyond the return from a static target asset allocation policy. The alpha drivers may be asset classes that have a negative correlation with financial asset classes such as stocks and fixed interest for example alternative investments such as art. The presence of both beta and alpha drivers justify the need for employing market timing to attain a higher return than a static target asset allocation policy.

Tokat et al (2006) conducted a study with aim of testing whether the change in opportunities to invest over time means that it would be beneficial for an investor to manage the portfolio actively and engage in market timing with the aim of attaining a higher return than a portfolio with a static target asset allocation policy. The focus of the study when analyzing determinants of portfolio performance focused on the impact of market timing on portfolio performance rather than the cross sectional analysis of total returns or the variation of returns

over time. In the same study by Tokat et al. (2006) on balanced mutual funds in the United States over a time period of 40 years from 1966 to 2006, active management yielded lower portfolio returns than a portfolio based on a fixed asset allocation policy over the studied period. However, actively managing the portfolio and using market timing yielded better returns than a portfolio based on a fixed asset allocation policy at specific periods during the studied period. Tokat et al. (2006) also concludes that investors ought to rely on a fixed asset allocation policy to formulate their portfolios at a low cost unless there is a strong belief in the ability to select a management team who will use market timing to yield better portfolio returns than a portfolio based on a fixed asset allocation policy.

Although the results are mixed, studies where a portfolio based on a fixed asset allocation policy yield better returns than an actively managed portfolio are predominant. However, most studies also agree than actively managing a portfolio by using market timing can yield better returns than a portfolio based on a fixed asset allocation policy. It would thus be expected that investment groups would seek to select active managers who will use market timing to deliver higher risk-adjusted net returns. Therefore, the hypotheses to be empirically tested are the following:

H_2 – Portfolio managed actively using market timing can yield better portfolio return than a portfolio based on a fixed asset allocation policy.

2.4.3 The Effect of Security Selection on Portfolio Performance

A strong argument by Jahnke (1997) was that there was no empirical evidence to justify the adoption of a static target asset allocation policy in the long-term when the expected returns vary over time for an investor. The change in opportunities to invest over time means that it would be beneficial for an investor to manage the portfolio actively and engage in security selection with the aim of attaining a higher return than a portfolio with a static target asset allocation policy. A study conducted by Hensel et al. (1991) on seven Russell U.S. Pension Plans arrived at the same conclusion. The argument was that a static target asset allocation was not as significant as indicated by Brinson et al. (1991) when explaining portfolio returns and justified the adoption of an active management strategy to enhance portfolio performance.

Anson (2004) took a different approach to justify the significance of security selection when explaining portfolio performance. He argued that a portfolio with two asset classes generates the asset allocation decision beta drivers and the alpha drivers. Beta drivers originate from the asset allocation policy and provide an extensive economic exposure to the financial markets. An example of such a policy would be a 60/40 split in stocks and bonds in terms of asset allocation with a specific risk tolerance. To be precise, the performance of beta drivers is similar to the performance of a market index that has no active risk or a static asset allocation policy. The alpha drivers tend to provide return beyond the return from a static target asset allocation policy. The alpha drivers may be asset classes that have a negative correlation with financial asset classes such as stocks and fixed interest for example alternative investments such as art. The presence of both beta and alpha drivers justify the need for employing security selection to attain a higher return than a static target asset allocation policy.

Tokat et al (2006) conducted a study with aim of testing whether the change in opportunities to invest over time means that it would be beneficial for an investor to manage the portfolio actively and engage in security selection with the aim of attaining a higher return than a portfolio with a static target asset allocation policy. The focus of the study when analyzing determinants of portfolio performance focused on the impact of security selection on portfolio performance. In the same study by Tokat et al. (2006) on balanced mutual funds in the United States over a time period of 40 years from 1966 to 2006, active management yielded lower portfolio returns than a portfolio based on a fixed asset allocation policy over the studied period. However, actively managing the portfolio and using security selection yielded better returns than a portfolio based on a fixed asset allocation policy at specific periods during the studied period. Tokat et al. (2006) also concludes that investors ought to rely on a fixed asset allocation policy to formulate their portfolios at a low cost unless there is a strong belief in the ability to select a management team who will select investments that yield better portfolio returns than a portfolio based on a fixed asset allocation policy.

Although the results are mixed, studies where a portfolio based on a fixed asset allocation policy yield better returns than an actively managed portfolio are predominant. However, most studies also agree than actively managing a portfolio by using security selection can

yield better returns than a portfolio based on a fixed asset allocation policy. It would thus be expected that investment groups would seek to select active managers who will select investments to deliver higher risk-adjusted net returns. Therefore, the hypotheses to be empirically tested are the following:

H_3 – A portfolio managed actively using security selection can yield better portfolio returns than a portfolio based on a fixed asset allocation policy.

2.4.3 The Effect of Gender Composition of the Management Team on Portfolio Performance

Diversity in terms of gender is another area that requires further research attention, especially in light of the push toward a more balanced representation of men and women and the growing integration of men and women in the management teams of investment groups (Jackson, 1992). Previous research has also suggested that gender can play a role in behavior and these differences in investment behavior are likely to affect portfolio performance. Bar, Riessen and Ruenzi (2007) observed that gender diversity in the management team had a negative influence on portfolio performance when analyzing mutual funds in the United States of America. However, Atkinson, Baird and Frye (2003) found that gender composition of the management team was not a significant determinant of portfolio performance when comparing mutual funds comprised mainly of fixed-income investments. This is supported by Niessen and Ruenzi (2007, 2009) who found that the return yielded by male dominated management teams in mutual funds is not significantly different from the return yielded by female dominated management teams. However, Niessen and Ruenzi (2007, 2009) noted that male dominated management teams attain a higher dispersion of portfolio returns and are less consistent in terms of portfolio returns.

Behavioral economics evidence suggested that male dominated management teams and female dominated management teams possessed differing strengths and weaknesses with respect to the requisite skills for investment management (Croson & Gneezy, 2009). Barber and Odean (2001) found that with respect to trading strategies, male dominated management teams were more overconfident than female dominated management teams; trading stock as much as 45 percent more than female dominated management teams. Being overconfident, male dominated management teams made more trades that resulted in lower returns once

transaction costs were incorporated. However, most studies indicated that women were more risk averse than men and earned less portfolio returns than men (Powell & Ansic, 1997; Jianakoplos & Bernasek, 1998)

Although the results are mixed, studies where male dominated management teams outperform female dominated management teams are predominant and it would thus be expected that investment groups would seek to have more men than women in the management teams of investment groups. Therefore, the hypothesis to be empirically tested is the following:

H_4 – The management team with more men is associated with greater portfolio performance than that with more female.

2.4.4 The Effect of Size of Membership on Portfolio Performance

It has been suggested by Littlepage (1991) that the size of an investment group was a factor that influenced the portfolio performance of a group. The difficulty of organizing and coordinating operations increases as the size of an investment club grows. Simultaneously, the addition of members to an investment club brings the value of more insight and experience to an investment club (Littlepage, 1991). To be precise, the benefit of experience and insight gained from increasing group size is counteracted by the loss of group coordination. Group coordination is lost when a group exceeds ten members. The increase in the size of a group reduces the level of contribution by existing members which may demotivate existing members (Littlepage, 1991). This shows that larger investment groups may have management teams which have the insight and experience required to select investments that yield higher risk-adjusted returns than an investment group using a static target asset allocation policy but co-ordination and motivation problems among members may be a barrier to an efficient decision making process.

Previous researches which show that large investment groups yield lower portfolio returns than small and medium-sized investment groups are predominant and it would thus be expected that investment groups would seek to strike the right balance between increasing size of membership to gain experience and insight and coordination of operations to maintain

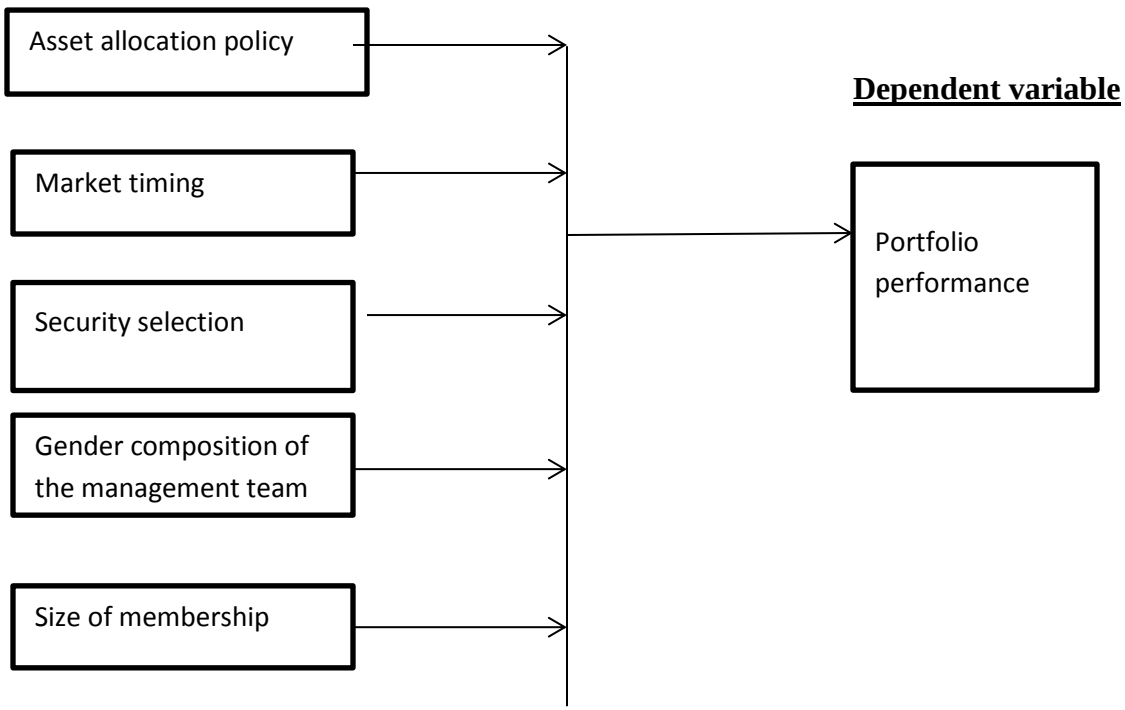
the motivation of members. Therefore, the hypothesis to be empirically tested is the following:

H_5 – Large investment groups yield lower portfolio returns than medium-sized and small investment groups.

2.5 Conceptual Framework

The conceptual framework is based on the literature that has been reviewed. Asset allocation policy, market timing, security selection, gender composition of the management team and size of membership are said to have an effect on the portfolio performance of Chamas in Nairobi County of Kenya. This study seeks to assess the determinants of portfolio performance of investment groups in Nairobi County of Kenya. The independent variables are size of membership, gender composition of the management team, asset allocation policy, market timing and security selection. The dependent variable is the portfolio performance.

Figure 2.1: Conceptual framework



Source: Author (2016)

These factors will be measured in the following way:

Table 2.1 Measures for the variables

Variables	Measures used in the study	References
Gender composition of the management team	Measured using the number of men and women in the management team	Bar et al. (2007), Barber and Oden (2001)
Asset allocation policy	Measured using the Chama's benchmark return for the period. A Chama's benchmark return is a consequence of the long-term asset allocation policy.	Brinson et al (1986), Brinson et al (1991), Liu (2005)
Market timing	Measured using the overweighting or underweighting of an asset class relative to its normal weight as laid out in the asset allocation policy.	Brinson et al (1986), Brinson et al (1991), Liu (2005)
Security selection	Measured using the portfolio's actual asset class returns in excess of those classes passive benchmark returns and weighted by the fixed asset allocation policy	Brinson et al (1986), Brinson et al (1991), Liu (2005)
Size of membership	Measured using the number of members in an investment group.	Littlepage (1991), KAIG (2014, 2016)
Portfolio performance	Portfolio performance is measured using the actual portfolio return for the period. This is measured using actual portfolio segment weightings and actual asset class returns.	Brinson et al (1986), Brinson et al (1991), Liu (2005)

2.6 Chapter Summary

Existing research has concluded that if Efficient Market Hypothesis (EMH) holds a portfolio's fixed asset allocation policy was the most significant determinant of portfolio performance while other factors including market timing and security selection played minor roles in explaining portfolio return and volatility over time (Brinson et al., 1986). While a number of scholars and practitioners are strongly persuaded that a portfolio's fixed asset allocation was the most significant determinant of portfolio performance, there are opponents to this view who are inspired by William W. Jahnke (Ibbotson & Kaplan, 2000). The conclusion in such studies was that an asset allocation policy only accounts for a minor role in explaining portfolio performance.

Identifying the determinants of portfolio performance of Chamas is further complicated by the fact that most studies have concentrated on the portfolios of pension funds. According to Oluoch (2013) pension funds in both developed and developing nations have a defined asset allocation policy by regulators thus limiting the opportunity to generalize results to informal investment groups, popularly known as Chamas, who have more flexibility in their asset allocation policies. This study unlike most studies which advocate for asset allocation policy, market timing and security selection (Brinson et al, 1986, Xiong et al., 2010) introduces gender composition of the management team and size of membership as independent variables in an attempt to explain portfolio performance of Chamas.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, philosophical assumptions of the study, population of the study, sample of the study, the data collection instruments as well as the data analysis techniques used to achieve the objectives of the study. This study seeks to evaluate the determinants of portfolio performance of investment groups in Nairobi County of Kenya.

3.2 Philosophical framework

The researcher adopted both the ontological and epistemological philosophical assumptions in conducting the research. The researcher adopted a positivistic approach, in search of accurate information through a research questionnaire. Management perception of the determinants of portfolio performance was sought from management of such investment groups through questionnaires. Results from the questionnaires provided data for comparative analysis between the different portfolios. This approach helped to understand the performance of Chamas in Nairobi County of Kenya, primarily via the insights, morals, and opinions of management and the "meanings" they build around the measurement of portfolio performance and assessing its determinants. The nominalist approach states that social reality is built by insights, morals, and opinions of people or society and thus managers' perception of portfolio performance and determinants of portfolio performance (asset allocation policy, security selection, market timing, gender composition of the management team and size of membership) was sought (Saunders, Lewis & Thornhill, 2009).

Philosophically, the researcher, in determining if asset allocation, security selection, market timing, gender composition of the management and size of membership have a significant influence on portfolio performance, took the views of both interpretivist and constructivist paradigms. The interpretivist and constructivist approaches were chosen because the study sought to understand the reasoning behind the responses of research respondents. Responses of research respondents are considered to be an essential part of research by interpretivists

and constructivists (Saunders et. al., 2009). The constructivist approach uses the responses of research respondents to study the mindset of a respondent with regards to portfolio performance and the determinants of portfolio performance. The ways of thinking about an issue can be revealed to a researcher who uses the constructive approach (Saunders et al., 2009).

3.3 Methodological Approach

Numerous researchers have tried to use both positivism and interpretivism by triangulating these two paradigms as well as research methods. This is done by using a quantitative and qualitative approach (Saunders et al., 2009). The mixture of paradigms, which is referred to as pragmatism, was created as a solution to the argument that positivism and interpretivism are not compatible when selecting a philosophical and methodological framework for a study (Saunders et al., 2009). This study adopted the triangulation approach. The researcher used the qualitative research paradigm to capture the perception of management on the determinants of portfolio performance of chamas, and the quantitative research paradigm to evaluate the statistical significance of each determinant of portfolio performance. Research based on existing literature and theories employs a deductive approach while research which uses statistical figures applies a quantitative approach (Saunders et al., 2009).

This study examined the cross-sectional dispersion of total returns rather a time-series analysis of portfolio returns which is evident in most studies (Brinson et al, 1986, Ibottson et al., 2010). Jahnke (1997) claimed that the change in the total return of a portfolio over time was not significant to investors. Investors were concerned about actual returns and the range of possible security returns at the conclusion of their time horizons. A focus on cross-sectional data on the total return of different portfolios rather than the variation of the return of a single portfolio over time helps assess whether asset allocation policy, market timing, security selection, gender composition of the management team and size of membership contribute to the over-performance or underperformance of the portfolio of a Chama.

3.4 Research design

This research implemented a descriptive research design. According to Saunders et al. (2009), a descriptive study involves determining the what, where and how of a phenomenon. This research design is best suited for this study as it seeks to assess the determinants of portfolio performance of chamas. Previous studies on the determinants of portfolio performance were conducted using a descriptive research design in order to shed more light on which determinants are the most significant (Brinson et al, 1986; Tokat et al, 2006).

3.5 Population and sampling

The population of this study comprises of the 148 Chamas as at 27th October 2016 in Nairobi County which are registered with the Kenya Association of Investment Groups. Given the significant role investment performs in maintaining development of any nation, and the recognition of the growth of Chamas into financial machines that have initiated multi-billion-shilling projects in various sectors of the economy, this study is a response to the invitation by Icharia (2014) to document investment groups (Chamas) in Kenya. The choice of chamas in Nairobi County is preferred because most of the chamas that failed within their first year of operation were located in Nairobi County (Gichuru, 2014). This study employed systematic sampling method in formulating the sample of 96 investment groups in the study. Systematic sampling involves selecting members of a population from a random starting point using a fixed interval known as the sampling interval (Saunders et al., 2009). The sampling interval is determined by dividing the population size and the sample size of the study (Saunders et al., 2009). As a result, the researcher picked every 2nd event in the population. According to Cochran (1963), the formula for calculating sample size is:

$$n = \frac{Z^2 \cdot p \cdot (1-p)}{e^2}$$

Where n is the sample size, Z^2 is the abscissa of the normal curve that cuts off an area α at the tails (1 - α equals the desired confidence level, e.g., 95%), e is the desired level of precision, p is the estimated proportion of an attribute that is present in the population, and q

is 1-p. The value for Z is found in statistical tables which contain the area under the normal curve.

3.6 Data collection methods

In line with addressing the first, second and third specific objectives, this study employed a questionnaire and gave it out to a member of the management team of the sample. Data on the passive weight, active weight, passive return and actual return of each asset class was used to compute asset allocation policy, security selection, market timing and portfolio return. The questionnaire contained open-ended as well as close-ended questions. The closed-ended questions offered more defined answers to enable actual proposals. The open ended questions were employed to test the score of a number of aspects and these aids in decreasing the amount of linked answers so as to get more diverse answers (Saunders et al., 2009). Data on the gender composition of the management of investment groups was also sourced from the questionnaire. This information is necessary to achieve the fourth objective. Data on size of membership was also sourced from the questionnaire. This information is necessary to achieve the fifth specific objective.

3.7 Data analysis

The researcher employed both quantitative and qualitative data analysis techniques to assess the determinants of portfolio performance. A cross-sectional analysis of portfolio returns per size of membership was done to assess the portfolio performance with respect to size. The researcher assessed the relationship between asset allocation, market timing and security selection, gender composition of the management team and size of membership as the independent variables and portfolio performance as the dependent variable by using correlation analysis and regression analysis.

3.7.1 Relationship between Asset Allocation Policy and Portfolio Performance

In addressing the first specific objective, correlation analysis was used to determine the strength and direction of the relationship between asset allocation policy and the portfolio performance of the Chama. Regression analysis was used to determine whether asset allocation is a significant determinant of portfolio performance. Asset allocation policy was measured using the policy return.

Benchmark return =- $\sum (W_{pi} * R_{pi})$ where:

W_{pi} is the predetermined weight of asset class i as laid out in the investment policy

R_{pi} is the benchmark return assigned to asset class i

The formula for calculating portfolio return is:

Actual portfolio return = $\sum (W_{ai} * R_{ai})$ where:

W_{ai} is actual weight for asset class i

R_{ai} is actual return for asset class i

The perception of the management team was also sourced to determine whether a portfolio based on a fixed asset allocation policy yields better returns than a portfolio based on an active management strategy. Triangulation of methods was done to check whether the findings were consistent.

3.7.2 Relationship between Market Timing and Portfolio Performance

In addressing the second specific objective, correlation analysis was used to determine the strength and direction of the relationship between market timing and the portfolio performance of the Chama. Regression analysis was used to determine whether market timing is a significant determinant of portfolio performance. Market timing was measured using the over or underweighting of an asset class as compared to the normal weight laid out in the investment policy (Brinson et al., 1986).

Market timing = $\sum \{(W_{ai} * R_{pi}) - (W_{pi} * R_{pi})\}$ where:

W_{ai} represents the over or underweighting of asset class i

W_{pi} is the predetermined weight of asset class i as laid out in the investment policy

R_{pi} is the benchmark return assigned to asset class i

The perception of the management team was also sourced to determine whether a portfolio which is actively managed using market timing yields better returns than a portfolio based on

a fixed asset allocation policy. Triangulation of methods was done to check whether the findings were consistent.

3.7.3 Relationship between Security Selection and Portfolio Performance

In addressing the third specific objective, correlation analysis was used to determine the strength and direction of the relationship between security selection and the portfolio performance of the Chama. Regression analysis was used to determine whether security selection is a significant determinant of portfolio performance. Security selection was measured using the portfolio's actual asset class returns in excess of those classes' passive benchmark returns and weighted by the static asset allocation policy (Brinson et al., 1991).

Security selection = $\sum \{(W_{pi} * R_{ai}) - (W_{pi} * R_{pi})\}$ where:

W_{pi} is the predetermined weight of asset class i as laid out in the investment policy

R_{pi} is the benchmark return assigned to asset class i

R_{ai} is the actual return of asset class i

The perception of the management team was also sourced to determine whether a portfolio which is actively managed using security selection yields better returns than a portfolio based on a fixed asset allocation policy. Triangulation of methods was done to check whether the findings were consistent.

3.7.4 Relationship between Gender Composition of the Management Team and Portfolio Performance

In addressing the fourth specific objective, correlation analysis was used to determine the strength and direction of the relationship between gender composition of the management team and the portfolio performance of the Chama. Regression analysis was used to determine whether gender composition of the management team is a significant determinant of portfolio performance. Gender composition of the management team was measured by determining whether majority of the members of the management team are male or female. Data on gender composition of the management team was coded so that 0 represents majority male, 1 represents balanced mix and 2 represents majority female. The perception of the management team was also sourced to determine whether the management team with more men is

associated with greater portfolio performance than that with more female. Triangulation of methods was done to check whether the findings were consistent.

3.7.5 Relationship between Size of Membership and Portfolio Performance

In addressing the fourth specific objective, correlation analysis was used to determine the strength and direction of the relationship between size of membership and the portfolio performance of the Chama. Regression analysis was used to determine whether size of membership is a significant determinant of portfolio performance. A Chama is small when it has a maximum of ten members, medium-sized when it has 11 to 20 members in the Chama and large when it has over 20 members in the Chama. Data on size of membership was coded so that 0 represents small investment groups, 1 represents medium-sized investment groups and 2 represents large investment groups. The perception of the management team was also sourced to determine whether large investment groups yield lower portfolio returns than medium-sized and small investment groups.

3.7.6 Normality Tests

Normality tests were made to determine whether the data collected from the investment groups is normally distributed. If the data is normally distributed then the study would employ parametric tests. The Shapiro-Wilk Test was used to test for normality. The Shapiro-Wilk Test is grounded on the relationship between the data and the corresponding normal scores (Peat & Barton, 2005). This allows the Shapiro-Wilk Test to have better results when testing normality than Kolmogorov-Smirnov Test even after Lillefors Significance correlation (Peat & Barton, 2005). The test was conducted using SPSS. The p-value of the Shapiro-Wilk Test was used to test for normality. When the p-value of a variable is less than 0.05 then the null hypothesis (the data fits a normal distribution) is rejected.

3.7.7 Tests for the Assumptions of the Classic Linear Regression Model

Diagnostic tests were made to test the assumptions of the ordinary least squares method (OLS). These tests were necessary to prove that the classic linear regression model has a number of appropriate properties, and also so that tests of hypothesis regarding the coefficient estimates could realistically be done (Brooks, 2008). The Lagrange Multiplier (LM) Test was conducted to determine whether there was heteroscedasticity. The LM Test involves comparing $\chi 2$-test statistic with the $\chi 2$-test value from the chi square tables. The $\chi 2$-

test statistic is computed by multiplying the number of observations to the R^2 of the model. If the $\chi 2$-test statistic is greater than the $\chi 2$-test value from the chi square tables then the null hypothesis is rejected. If the null hypothesis is rejected then there is heteroscedasticity (Brooks, 2008).

The study also tested for autocorrelation using the Durbin Watson Statistic. Another assumption of the classic linear regression model is that the error terms are uncorrelated with each other across observations. When the error terms are not uncorrelated with each other, it would be stated that they are autocorrelated (Brook, 2008). The Durbin Watson (DW) Statistic has two critical values: an upper critical value (d_U) and a lower critical value (d_L), and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. If the Durbin Watson Statistics falls between 0 and the lower critical value then there is evidence of positive autocorrelation. In addition, the test is inconclusive if the DW test value falls either between the upper critical value and lower critical value or between 4-d_U and 4-d_L. However, there is evidence of negative autocorrelation if the DW statistics falls between 4-d_L (Brooks, 2008). The test was conducted using SPSS.

3.7.8 Correlation Analysis

In an attempt to determine the strength and direction of the relationship between asset allocation policy, security selection, market timing, gender composition of the management team and size of membership, as independent variables, and portfolio performance as a dependent variable correlation analysis was used. Correlation analysis is a statistical measure that determines the extent to which two or more factors are related (Saunders et al., 2009). Since the study used parametric data, Pearson's correlation coefficient denoted by r was used to analyze the strength and direction of the relationship between asset allocation policy, security selection, market timing, gender composition of the management team and size of membership, as independent variables, and portfolio performance as a dependent variable.

3.7.9 Multiple Regression Analysis

In an attempt to determine the significance of the relationship between asset allocation policy, security selection, market timing, gender composition of the management team and

size of membership, as independent variables, and portfolio performance as a dependent variable multiple regression analysis was used. A multiple regression analysis is a statistical tool that allows a researcher to assess how multiple independent variables are related to a dependent variable (Saunders et al., 2009). The regression model used in the study was:

$$Portfolio\ performance = \alpha_0 + \alpha_1\ (Asset\ allocation) + \alpha_2\ (Market\ timing) + \alpha_3\ (Security\ selection) + \alpha_4\ (gender\ composition\ of\ the\ management\ team) + \alpha_5\ (size\ of\ membership) + \varepsilon$$

The p-values of independent variables were used to determine whether the independent variables were significant in explaining portfolio performance. When the p-value of a variable is less than 0.05 then the null hypothesis (the relationship is not significant) is rejected. The multiple r value was also used to determine how well the model describes the data. The closer the multiple r value is to 1 the better the goodness of fit and therefore the model could be used to predict the behaviour of the population. In addition, the adjusted coefficient of determination (adjusted R^2) was used to determine the degree to which independent variables could explain the dependent variable. The closer the adjusted R^2 value is to 1 the greater the extent to which the independent variables explain the dependent variable. The F statistic was also used to determine whether the model was reliable. If the p-value is less than 0.05, then model is considered reliable.

3.8 Research quality

3.8.1 Reliability

According to Saunders et al. (2009), reliability in a study is associated to whether the results of the study would be similar if the research would be replicated with the same data and method. Reliability is significant to quantitative studies as it is clearer if the measurements are stable or not. In this particular research, data on portfolio performance and the determinants of portfolio performance from the annual reports of investment groups which adds reliability, as secondary data of this kind is very reliable (Saunders et al., 2009). Saunders et al. (2009) argues that reliability in a study comprises of internal reliability, stability and inter-observer consistency. Internal reliability explains whether the indicators of the index are consistent or not consistent. Stability relates to how stable the measurement is

over time. Inter-observer consistency explains whether observations of the data are affected by any subjective input.

This study ensured reliability of data methods by conducting a pilot study using twenty investment clubs whose results were not included in the findings. The motive was to test the success of the data collection method. In addition, the Cronbach Alpha was estimated assess the reliability of the questionnaire. A Cronbach's Alpha value (α) greater than or equal to 0.5 is usually considered reliable. The Cronbach's Alpha value for the questionnaire was (α) = 0.776. This value slightly exceeds the value recommended by Theodosiou et al. (2012) of above 0.6. Therefore the items measuring the determinants of portfolio performance were found reliable

3.8.2 Validity

The validity of a study concentrates on the measurements used and that the research instrument truly measures what it is meant to measure (Saunders et al., 2009). According to Saunders et al. (2009), the use of reliable secondary data within the field of economics and finance is normally preferred to the use of primary data.

3.8.3 Face Validity

Face validity is a form approval from a person with experience within the area of study, which the individual inputs with his or her knowledge to the study's measures (Saunders et al., 2009). Despite the fact that this research employs measurement models used in previous studies and not giving any new form of measurement, the use of the correlation analysis and multiple regressions analysis were tested using SPSS.

3.8.4 Internal Validity

Internal validity assesses the dependability of the research but differs in that it is more concentrated on the observation of the researcher and if the dependent variables change due to the independent variable and not due to other variables (Saunders et al., 2009). The measures also need to be consistent so as to generate valid findings throughout the research (Saunders et al., 2009). In this research, the dependent variable portfolio performance was computed before entered into a data spread sheet. This study ensured internal validity by using multiple methods such as interviews and questionnaire to assess the determinants of

portfolio performance of investment groups in Nairobi County of Kenya. The management teams of ten investment groups were asked questions framed in different ways regarding the determinants of portfolio performance of investment groups.

3.8.5 External Validity

External validity refers to the likelihood of obtaining results that can be generalized and it reveals how well the research's findings are relevant to other investment groups (Saunders et al., 2009). Scholars aim to achieve results which can be relevant to a larger sample than what has been used in the study. As a result, quantitative studies mostly concentrate on choosing a representative sample so as to apply the result on even larger scales (Saunders et al., 2009). This study ensured external validity by using a representative sample of 96 investment groups in the study. In addition, the research employed the same research design and sampling method as Icharia (2014) who was investigating wealth creation among investment groups in Nairobi County of Kenya.

3.9 Ethical Considerations

The participation of respondents in the study was voluntary and anonymous. The respondents were also free to withdraw from the study at any point in time. The purpose of the study was made known to all the respondents in order to ensure that any consent given was informed. The introductory letter (Appendix I) that was given to the respondents contained the purpose of the study. This research respected the anonymity and confidentiality of research respondents by using clean data. A clean data set does not contain information that identifies respondents, such as a name or address. The names of respondents were replaced with pseudonyms. Names of investment clubs were deleted from the file once they were no longer needed.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents an analysis and report of the findings of this study. An analysis was done on the data collected to determine the response rate. Findings on management perception on the portfolio holdings preference of investment groups in Nairobi County and the determinants of portfolio performance obtained from the research questionnaires' respondents are presented. The data from the sample is presented in descriptive terms before being tested for statistical significance on the relationship between asset allocation policy, security selection, market timing, gender composition of the management team and size of membership as independent variables and portfolio performance as a dependent variable.

4.2 Response rate

The data for this study was collected between March 2017 and April 2017 in 96 Chamas. There were 96 questionnaires distributed to the management team of such investment groups. However, only 61 questionnaires were returned representing a 63.54% response rate. Three of the questionnaires were not filled properly hence 58 questionnaires were usable. This represented a 60.41% response rate.

4.3 Portfolio Holdings held by Investment Groups in Nairobi County of Kenya

The results as detailed by table 4.1 show that the respondents often considered real estate to be an ideal portfolio holding because real estate had the lowest coefficient of variation. According to Saunders et. al. (2009) the lower the coefficient of variation the better the investment decision of investment clubs. However, the respondents never considered derivatives and jewellery and art work to be an ideal choice of investment. In addition, respondents rarely invest in fixed income securities, equity and mutual funds. Moreover, respondents sometimes do consider business to be an ideal choice of investment.

The results also show that investment groups rarely diversified when considering the ideal investment decision because of the low mean. However, the results also highlighted varied responses from respondents on whether to diversify when considering the ideal investment

decision because of the high coefficient of variation. Unexpected responses from respondents included venture capital, unit trusts and private equity.

Table 4.1 Portfolio Holdings held by Investment Groups

	MEAN	**SD**	**COV**
To what extent does your investment group consider fixed-income securities to be an ideal investment?	2.81	1.40	0.49
To what extent does your investment group consider common stock to be an ideal investment?	2.96	1.42	0.48
To what extent does your investment group consider mutual funds to be an ideal investment?	2.32	1.32	0.57
To what extent does your investment group consider real estate to be an ideal investment?	4	1.23	0.30
To what extent does your investment group consider derivatives to be an ideal investment?	1.76	1.07	0.61
To what extent does your investment group consider farming to be an ideal investment?	2.88	1.24	0.43
To what extent does your investment group consider jewellery and art work to be an ideal investment?	1.68	1.09	0.64
To what extent does your investment group consider business to be an ideal investment?	3.64	1.29	0.35
Overall	2.75	1.26	0.48

4.4 Portfolio Performance of Investment Groups in Nairobi County of Kenya

Table 4.2 below indicates the basic descriptive statistics of the portfolio returns of investment groups. The study showed a low average portfolio return of -0.325% over the studied period. The variation of portfolio return was also low in the studied period (SD= 0.011). It is also worth noting that the minimum portfolio return was -31.78% in 2016. The maximum portfolio return recorded in 2016 was 17.98%.

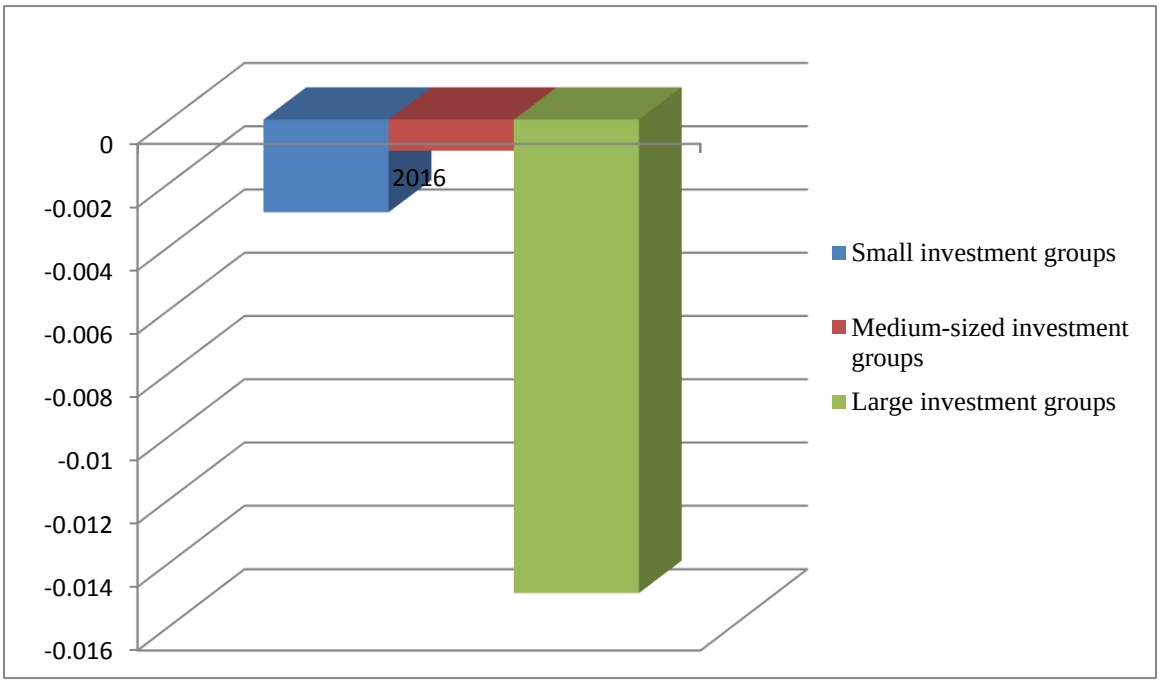
Table 4.2: Descriptive statistics - Annual Portfolio Return for the year 2016

Year	**2016**
Minimum Portfolio Return	-0.3178
Maximum Portfolio Return	0.1798
Sum	-0.18848
Mean	-0.00325
Standard Deviation	0.011

4.4.1 Cross-sectional Analysis of Portfolio Returns per Size of Membership of the Sample (2016)

The researcher used cross-sectional analysis to assess the portfolio returns of different investment groups for the different sizes of membership over the one year of study, 2016. The average return of each size was computed using the portfolio return of each investment group within that size. The investment groups from the sample fall under 3 sizes of membership under which the investment groups registered with KAIG are categorized. These are: Small Investment Groups, Medium-sized Investment Groups and Large Investment Groups. Medium-sized investment groups (-0.098%) had the highest average return in 2016. This was followed by small investment groups (-0.293%) in 2016. Large investment groups (-1.496%) had the lowest average return in 2016.

Figure 4.1 Cross-sectional Analysis of Portfolio Returns per Size of Membership of the Sample (2016)



4.5 The Determinants of Portfolio Performance of Investment Groups in Nairobi County of Kenya

Table 4.3 shows that respondent investment groups agreed (mean=3.74, SD = 1.42) that a fixed asset allocation policy yields higher returns than a dynamic asset allocation policy. This is an indication that the management teams of investment clubs agreed that portfolio based on an index fund or a market benchmark yields better portfolio returns than an actively managed portfolio. In addition, investment groups agreed (mean = 4.10, SD = 1.07) that active management (market timing and asset allocation) can yield better returns than a static target asset allocation policy. The management team of an investment group must possess the ability to select assets that yield higher risk adjusted returns than the returns from a static target asset allocation policy (Tokat et al., 2006).

Investment groups agreed (mean = 3.56, SD = 1.37) that female dominated management team can yield better returns than a male dominated management team in an investment group. This is an indication that investment groups agreed that male dominated management teams and female dominated management teams possessed differing strengths and

weaknesses with respect to the requisite skills for investment management (Croson & Gneezy, 2009). In addition, investment groups agreed (mean =4.00, SD = 1.19) that large investment groups have the required expertise to earn better portfolio returns than small investment groups. This is an indication that larger investment groups may have management teams which have the insight and experience required to select investments that yield higher risk-adjusted returns than a static target asset allocation policy but co-ordination and motivation problems among members may be a barrier to an efficient decision making process. The varying responses from investment groups highlight this dynamic.

Table 4.3: Descriptive Statistics - Responses of investment groups

	Statements	**Mean**	**SD**
1	A static asset allocation policy yields better portfolio returns than a dynamic asset allocation policy in your investment group.	3.74	1.42
2	Active management can yield better portfolio returns than a static asset allocation policy in your investment group.	4.10	1.07
3	A female dominated management team can yield better returns than a male dominated management team in your investment group.	3.56	1.37
4	Large investment groups have the expertise required to earn better portfolio returns than small investment groups.	4.00	1.19

4.5.1 Normality Test

Normality tests were made to determine whether the data collected from the investment groups is normally distributed. If the data is normally distributed then the study would employ parametric tests. The Shapiro-Wilk Test was used to test for normality. The Shapiro-Wilk Test is grounded on the relationship between the data and the corresponding normal scores (Peat & Barton, 2005). This allows the Shapiro-Wilk Test to have better results when testing normality than Kolmogorov-Smirnov Test even after Lillefors Significance correlation (Peat & Barton, 2005). The test was conducted using SPSS. The p-value of the Shapiro-Wilk Test was used to test for normality. When the p-value of a variable is less than 0.05 then the null hypothesis (the data fits a normal distribution) is rejected. The results of

the Shapiro-Wilk Test are presented in table 4.4 below. The study showed that the p-values of the variables were greater than 0.05. The null hypothesis could not be rejected which means that the data fits a normal distribution. As a result, the study used parametric tests to test the relationship between asset allocation policy, market timing and security selection, gender composition of the management team and size of membership as the independent variables, and portfolio performance as the dependent variable.

Table 4.4 Tests for normality results

Portfolio performance	**Kolmogorov-Smirnov**		**Shapiro-Wilk**	
	Statistic	**Sig**	**Statistic**	**Sig**
Asset Allocation	0.213	0.200	.922	0.407
Market Timing	0.232	0.200	.912	0.478
Security Selection	0.253	0.200	.858	0.182
Gender Composition of the Management Team	0.066	0.200	.991	0.622
Size of Membership	0.147	0.200	.974	0.918

4.5.2 Testing the Assumptions of the Classic Linear Regression Model

Diagnostic tests were made to test the assumptions of the ordinary least squares method (OLS). These tests were necessary to prove that the classic linear regression model has a number of appropriate properties, and also so that tests of hypothesis regarding the coefficient estimates could realistically be done (Brooks, 2008). One of the key assumptions of the classic linear regression model is that the variance of the error term is constant across observations. When the error term is not constant, the error term is said to be heteroscedastic across observations. The Lagrange Multiplier (LM) Test was conducted to determine whether there was heteroscedasticity. The LM Test involves comparing $\chi 2$-test statistic with the $\chi 2$-test value from the chi square tables. The $\chi 2$-test statistic is computed by multiplying the number of observations to the R^2 of the model. If the null hypothesis is rejected then there is heteroscedasticity (Brooks, 2008). If the $\chi 2$-test statistic is greater than the $\chi 2$-test value from the chi square tables then the null hypothesis is rejected. The $\chi 2$-test statistic is 185.6 which

is less than the $\chi 2$-test tabulated value of 341.395. As a result, the null hypothesis is accepted. It was concluded that there was no heteroscedasticity.

The study also tested for autocorrelation using the Durbin Watson (DW) Statistic. The Durbin Watson Statistic tests for the relationship between an error term and its previous value. The null hypothesis (H_0: $\rho = 0$) states that the error term at time t -1 and time t are independent of each other (Brooks, 2008). If the Durbin Watson Statistic falls between 0 and the lower critical value then there is evidence of positive autocorrelation. In addition, the test is inconclusive if the DW test value falls either between the upper critical value (d_U) and lower critical value (d_L) or between 4-d_U and 4-d_L. However, there is evidence of negative autocorrelation if the DW statistics falls between 4-d_L and 4 (Brooks, 2008). Field (2009) suggested that values under 1 and more than 3 indicate positive autocorrelation and negative autocorrelation respectively. Table 4.5 shows that there is no evidence of autocorrelation.

Table 4.5 Durbin Watson Test Results

Model		
1	Durbin Watson Statistic	1.449

4.5.3 Correlation Analysis

Pearson's Correlation Coefficient was used to test the strength and association between asset allocation policy, security selection, market timing, gender composition of the management team and size of membership as independent variables and portfolio performance of investment groups as the dependent variable for the year of study 2016. The results of the Pearson correlation model are presented in Table 4.6 below. As highlighted by Wileman and Jary (1997), the Pearson correlation coefficient (r) is deemed as extremely weak when it ranges from 0.0 to 0.1 and weak when it ranges from 0.2 to 0.39. In the same study by Wileman and Jary (1997), the Pearson correlation coefficient (r) is deemed as moderate when it ranges from 0.4 to 0.59 and strong when it ranges from 0.6 to 0.79. The correlation is very strong when it ranges from 0.8 to 1. Such a high correlation ought to be avoided to ensure that there is no multicollinearity. Since the highest correlation coefficient is 0.663, there is no multicollinearity.

The study found a strong positive relationship between security selection and portfolio performance of investment groups (r=.663, p value of 0.000) followed by the moderate positive relationship between asset allocation and the portfolio performance of investment groups (r=.549, p value of 0.000). The study also found a weak positive relationship between market timing and portfolio performance of investment groups (r=.305, p value of 0.000) followed by the weak positive relationship between gender composition of the management team and portfolio performance of investment groups (r=.289, p value of 0.008). However, the weak negative correlation between size of membership and portfolio performance of investment groups was not significant (r=-.082, p value of 0.162).

Table 4.6 Pearson Correlation Analysis

		Portfolio performance	Asset allocation	Market timing	Security selection	Gender composition	Size of membership
Portfolio Performance	Pearson correlation	1	0.549**	0.305**	0.663**	0.289**	-0.082
	Sig (2 tailed)		0.000	0.000	0.000	0.000	0.162
	N	58	58	58	58	58	58
** Correlation is significant at the 0.01 level (2 tailed)							

4.5.4 Multiple Regression Analysis

To further explain the association between asset allocation policy, security selection, market timing, gender composition of the management team and size of membership as independent variables and portfolio performance of investment groups as a dependent variable, a multiple regression model was computed and used. The regression model used in the study was:

$$\textit{Portfolio performance} = \alpha_0 + \alpha_1 \textit{ (Asset allocation)} + \alpha_2 \textit{ (Market timing)} + \alpha_3 \textit{ (Security selection)} + \alpha_4 \textit{ (gender composition of the management team)} + \alpha_5 \textit{ (size of membership)} + \varepsilon$$

The multiple r value was used to determine how well the model describes the data. The closer the multiple r value is to 1 the better the goodness of fit and therefore the model could be used to predict the behaviour of the population. Table 4.7 shows that the model describes 80.0% of the data. This is an indication that the model could be used to predict the behaviour of the population. In addition, the adjusted coefficient of determination (adjusted R^2) was

used to determine the degree to which independent variables could explain the dependent variable. The closer the adjusted R^2 value is to 1 the greater the extent to which the independent variables explain the dependent variable (Saunders et al., 2009). Asset allocation policy, market timing, security selection, gender composition of the management team and size of membership as independent variables explain 63.4% of the changes in portfolio performance.

Analysis of Variance (ANOVA) was calculated to test the variance of the model. The F statistic was also used to determine whether the model was reliable. If the p-value is less than 0.05 then the model is considered reliable. Table 4.7 shows that p-value is 0.000. The model is therefore considered reliable.

The p-values of independent variables were used to determine whether the independent variables were significant in explaining portfolio performance of investment groups. When the p-value of a variable is less than 0.05 then the null hypothesis (the relationship is not significant) is rejected. If the null hypothesis is rejected then the independent variable is significant when explaining the dependent variable. Table 4.7 shows that asset allocation policy (p value of 0.000), security selection (p value of 0.000), gender composition of the management team (p value of 0.018) and size of membership (p values of 0.000) were the only significant determinants when explaining the portfolio performance of investment groups. However, market timing (p value of 0.740) was found to be insignificant.

Table 4.7 Multiple Regression Analysis Results

Model Summary[b]						
Model	R	R Square	Adjusted R Square		Std. Error of the Estimate	
1	.800[a]	0.640	0.634		0.08396	
ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.562	6	0.712	101.061	0.000[b]
	Residual	2.002	56	0.007		
	Total	5.564	62			

a. Predictors: (Constant), Asset allocation, Market timing, Security selection, Gender composition of the management team, Size of membership

b. Dependent Variable: Portfolio Performance

Model		Unstandardized Coefficients		Sig
		B	Std. Error	
1	(Constant)	-0.037	0.013	0.005
	Asset allocation	0.878	0.083	0.000
	Market Timing	-0.128	0.385	0.740
	Security Selection	5.293	0.400	0.000
	Gender composition of the management team	-0.013	0.006	0.018
	Size of membership	-0.052	0.010	0.000

4.6 Triangulation of primary and secondary data

Table 4.8 shows that investment groups agreed that a fixed asset allocation policy can yield better portfolio returns than a dynamic asset allocation policy. This is consistent with the regression results which determined that asset allocation policy is a significant determinant of portfolio performance. In addition, investment groups agreed that actively managing your portfolio by using market timing and security selection can yield better portfolio returns than a portfolio based on a fixed asset allocation policy. This is consistent with the regression results which determined that security selection is a significant determinant of portfolio performance. However, this contradicted the regression results using secondary data which determined that market timing was not a significant determinant of portfolio performance.

This inconsistency could be explained by the bearish run in the stock market in 2016 which greatly hampered the use of market timing in managing a portfolio actively. As a result, investment groups were unable to make high risk adjusted returns in the short-term.

Investment groups agreed that a female dominated management team can yield better returns than a male dominated management team in an investment group. This is consistent with the regression results which determined that portfolio performance of investment groups in Nairobi County is dependent on the gender composition of the management team. Investment groups also agreed that large investment groups have the required expertise to earn better portfolio returns than small investment groups. This contradicted with the regression results which determined that large investment groups yield lower returns than middle-sized and small investment groups. The main reason for this inconsistency is that group size increases portfolio performance up to a point. Research has suggested that its 10 members (Littlepage, 1991). However, the benefit of experience and insight gained from increasing group size is counteracted by the loss of group coordination. Another reason might be that large investment groups are able to amass more contributions than small and medium sized investment groups and engage in investments that are regarded as high risk such as farming. However, the demotivation of members within the group due to reduced input in the investment group may result in a drop in performance.

Table 4.8 Triangulation of primary data and secondary data results

Determinants	**Primary data results**	**Secondary data results**	**Consistency**
Asset Allocation Policy	Significant	Significant	Consistent
Market Timing	Significant	Not Significant	Not consistent
Security Selection	Significant	Significant	Consistent
Size of membership	Significant	Significant	Consistent
Gender Composition of the Management Team	Significant	Significant	Consistent

4.7 Chapter Summary

Findings from the research questionnaire indicate that investment groups often considered real estate to be an ideal portfolio holding. However, the respondents never considered derivatives and jewellery and art work to be an ideal choice of investment. In addition, respondents rarely invest in fixed income securities equity and mutual funds. Moreover, respondents sometimes do consider business to be an ideal choice of investment. The study showed a low average portfolio return over the studied period. In addition, medium-sized investment groups had the highest return in the studied period.

The first objective of the study was to assess the influence of asset allocation on portfolio performance of investment groups in Nairobi County of Kenya. Asset allocation was found to be a significant determinant of portfolio performance of investment groups. The second objective of the study was to assess the influence of market timing on portfolio performance of investment groups in Nairobi County of Kenya. The study found that market timing was not a significant determinant of portfolio performance of investment groups. The third objective was to assess the influence of security selection on portfolio performance. The study found that security selection was a significant determinant of portfolio performance of investment groups. The fourth objective was to assess the influence of gender composition of the management team on the portfolio performance of investment groups. Gender composition of the management team was a significant determinant of portfolio performance. The fifth objective was to assess the influence of size of membership on the portfolio performance of investment groups. Size of membership was a significant determinant of portfolio performance of investment groups.

CHAPTER FIVE

SUMMARY FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This Chapter discusses the findings of the study to each of the problem stated. A summary of the conclusions derived from the analysis of the findings is provided. Section 5.2 gives a summary of the research objectives and methods used to accomplish each objective. Section 5.3 provides a discussion of the research findings and conclusion, while Section 5.4 outlines the implications of the findings to (i) policy (ii) academics and research and (iii) corporate practice. Limitations of the study are provided as well as a recommendation for areas that need further research.

5.2 Summary of Research Objectives and Methods

The purpose of this study was to assess the determinants of portfolio performance of investment groups in Nairobi County of Kenya. The five specific objectives were addressed. The first specific objective was to assess the influence of asset allocation on portfolio performance of investment groups in Nairobi County of Kenya. The second specific objective was to assess the influence of market timing on portfolio performance of investment groups in Nairobi County of Kenya. The third specific objective was to assess the influence of security selection on portfolio performance of investment groups in Nairobi County of Kenya. The fourth specific objective was to assess the influence of gender composition of the management team on portfolio performance of investment groups in Nairobi County of Kenya. The fifth specific objective was to assess the influence of size of membership on portfolio performance of investment groups in Nairobi County of Kenya. The target population was investment groups who were registered with KAIG. Data was collected using questionnaires. The questionnaire contained open-ended as well as close-ended questions.

Descriptive statistics of mean and standard deviation were used to analyze the actual portfolio returns of investment groups for the year of study, 2016.and the responses of investment groups on the determinants of portfolio performance. Normality tests were made using the Shapiro-Wilk Test to determine whether the data collected from the investment

groups was normally distributed. The study also tested for and heteroscedasticity using the LM Test and autocorrelation using the Durbin Watson Statistic. In an attempt to determine the relationship between asset allocation policy, security selection, market timing, gender composition of the management team and size of membership, as independent variables, and portfolio performance as a dependent variable correlation analysis and multiple regression analysis were used.

5.3 Discussion of Research Findings and Conclusion

5.3.1 Relationship between Asset Allocation and Portfolio Performance of Investment Groups

The first objective of the study was to assess the influence of asset allocation on the portfolio performance of investment groups in Nairobi County. The significance of the relationship between asset allocation policy and portfolio performance was tested at a level of significance of 0.05. The study found that asset allocation policy (p value of 0.000) was a significant determinant of portfolio performance of investment groups. These findings are in line with the findings by Brinson et al (1986) and Xiong et al. (2010) who found out that a fixed asset allocation policy is a significant determinant of portfolio performance. This means that investment groups which base their portfolios on index funds or market benchmarks may yield better portfolio returns than actively managing a portfolio. This means that investment groups ought to rely on a fixed asset allocation policy based on an index fund or a benchmark which comprises mainly of treasury bills to formulate their portfolios at a low cost.

5.3.2 Relationship between Market Timing and Portfolio Performance of Investment Groups

The second objective of the study was to assess the influence of market timing on portfolio performance of investment groups in Nairobi County of Kenya. The significance of the relationship between market timing and portfolio performance was tested at a level of significance of 0.05. The study found that market timing was not a significant determinant of portfolio performance. These findings contradict the argument of Jahnke (1997) and Hensel et al. (1991) who observed that the change in opportunities to invest over time means that it would be beneficial for an investor to manage the portfolio actively and engage in market

timing with the aim of attaining a higher return than a portfolio with a fixed asset allocation policy. The implementation of an active management strategy by investment groups ought to ensure that market timing is very limited since portfolios will yield less returns than a portfolio based on a fixed asset allocation policy.

5.3.3 Relationship between Security Selection and Portfolio Performance of Investment Groups

The third objective of the study was to assess the influence of security selection on portfolio performance of investment groups in Nairobi County of Kenya. The significance of the relationship between security selection and portfolio performance was tested at a level of significance of 0.05. The study found that security selection (p value of 0.000) was a significant determinant of portfolio performance of investment groups. These findings are consistent with the argument of Jahnke (1997) and Hensel et al. (1991) who observed that the change in opportunities to invest over time means that it would be beneficial for an investor to manage the portfolio actively and engage in security selection with the aim of attaining a higher return than a portfolio based on a fixed asset allocation policy. This means that an investment groups needs to possess a management team with the necessary skill to select investments that yield high risk adjusted returns. The necessary skills are high level of financial literacy, wealth of experience in market trading and positioning, experience in transaction cost measurement and cost control.

5.3.4 Relationship between Gender Composition of the Management Team and Portfolio Performance of Investment Groups

The fourth objective of the study was to assess the influence of gender composition of the management team on portfolio performance of investment groups in Nairobi County of Kenya. The study found that gender composition of the management team was a significant determinant of portfolio performance. The findings of this study are consistent with the argument by Powell and Ansic (1997) and Jianakoplos and Bernasek (1998) who observed that women were more risk averse than men and earned less portfolio returns than men. The low level of portfolio performance by investment groups in 2016 was attributable to gender differences in the management team. As a result, investment groups can focus on integrating men and women in the management team. Men actively manage the portfolio by using

market timing and security selection excessively. This may result in high transaction costs which result in low portfolio returns. As a result, women monitor the transaction cost to ensure that the portfolio yields returns at a low cost.

5.3.5 Relationship between Size of Membership and Portfolio Performance of Investment Groups

The fifth objective of the study was to assess the influence of size of membership on portfolio performance of investment groups in Nairobi County of Kenya. The study found that size of membership was a significant determinant of portfolio performance. The findings of this study are also consistent with the argument by Littlepage (1991) who found that the difficulty of organizing and coordinating operations increases as the size of an investment club grows. Simultaneously, the addition of members to an investment club brings the value of more insight and experience to an investment group (Littlepage, 1991). To be precise, the benefit of experience and insight gained from increasing group size is counteracted by the loss of group coordination leading to a drop in portfolio performance. Investment groups ought to start with small sizes of membership with a maximum of ten members and then grow steadily from there.

5.4 Implications

5.4.1 Policy Implications

Findings of this study should guide the Kenyan government through the relevant bodies such as the Kenya Association of Investment Groups (KAIG) in the development of fixed asset allocation policies that can be adopted by investment groups registered with KAIG and to continue holding workshops and seminars to educate the management teams of investment groups that investors ought to rely on a fixed asset allocation policy to formulate their portfolios at a low cost unless there is a strong belief in the ability to select a management team who will choose securities that yield better portfolio returns than a portfolio based on a fixed asset allocation policy. KAIG can also educate investment groups on the relationship between gender composition of the management team and portfolio performance. Investment groups can focus on integrating men and women in the management team. KAIG can also educate investment groups on the relationship between size of membership and portfolio performance. Investment groups ought to start with small sizes of membership with a

maximum of ten members and then grow steadily from there. This will in turn help investment groups make better investment decisions and realize expected returns. Chamas have an inherent interest of improving portfolio performance as their ability to grow and prosper is dependent on attaining high risk adjusted returns from their portfolios. The government also benefits because investment performs a significant role in maintaining development of any nation (Icharia, 2014).

5.4.2 Academics and Research Implications

A portfolio's fixed asset allocation policy was the most significant determinant of portfolio performance while other factors including market timing and security selection played minor roles in explaining portfolio return and volatility over time (Brinson et al., 1986). However, the change in opportunities to invest over time means that it would be beneficial for an investor to manage the portfolio actively and engage in market timing and security selection with the aim of attaining a higher return than a portfolio with a static asset allocation policy (Jahnke, 1997). Such contrasting views indicate that clearly confirmed determinants of portfolio performance have proved elusive. The findings of this study add to a large body of existing literature by Brinson et al. (1986), Tokat et al. (2006), Brinson et al (1991), Littlepage (1991) and Xiong et al. (2010) that has confirmed that the asset allocation policy of an investment group, security selection, gender composition of the management team and size of membership were significant when explaining the portfolio performance of investment groups. To be more precise, a fixed asset allocation policy based on an index fund which mainly comprises of treasury bills would yield better portfolio returns for investment groups that lack the expertise required to actively manage a portfolio and use security selection to realize high risk adjusted portfolio returns. For such an investment group, the asset allocation is the most significant determinant of portfolio performance. However an investment group which strong believes in the ability of management team to select investments that yield higher risk adjusted returns than a portfolio based on a fixed asset allocation would regard security selection to be the most significant determinant of portfolio performance.

5.4.3 Investment Groups Practice Implications

Chamas have an inherent interest of improving portfolio performance as their ability to grow and prosper is dependent on attaining high risk adjusted returns from their portfolios (Edwin & Martin, 2011). However, the efforts of Chamas are very fragmented and much disorganized creating wealth significantly below potential (Icharia, 2014). Findings of this research come in handy in helping shape portfolio management by providing the management teams of investment groups with a clear understanding of which determinants significantly influence portfolio performance. The results of this study implore to rely on a fixed asset allocation policy to formulate their portfolios at a low cost unless there is a strong belief in the ability to select a management team who will choose securities that yield better portfolio returns than a portfolio based on a fixed asset allocation policy. This means that investment groups can invest in a portfolio which comprises mainly of treasury bills if it lacks the necessary skills to actively manage a portfolio. In addition, investment groups can invest in an index fund which offers the lowest transaction cost. . Investment groups can focus on integrating men and women in the management team. Investment groups ought to also start with small sizes of membership with a maximum of ten members and then grow steadily from there.

5.5 Limitations

Although careful attention was given to the methods of data collection and analysis, there are many other determinants of portfolio performance of an investment group that should also be acknowledged. In this study, the researcher has only focused on the most significant determinants of portfolio performance. Other factors such as manager selection and the economic conditions are not considered during the period of the study. In addition, there are many investment groups in Kenya that are not registered with Kenya Association of Investment Groups (KAIG) that have invested in various asset classes and realized returns. However, this study captures all sizes of membership and forms of registration of investment groups. It is therefore expected that the results of this study will be applicable to such investment groups.

Another limitation is that this study is limited to investment groups in Nairobi County. Icharia (2014) highlighted that the creation of counties has facilitated the emergence of

investment groups in other counties such as Kiambu, Uasin Gishu and Murang'a. Another limitation is that the differences in measurement of portfolio performance present another source of inconsistency in the findings on the determinants of portfolio performance as there is little consensus about which measurement instrument to apply. This study used the weighted average of the expected returns of investments in a portfolio with the investment proportions as weights to measure the portfolio return. Another limitation is that this study used a small number of large investment groups in the sample. The small number of large investment groups in the sample is attributable to the efforts by KAIG who encourage investment groups to start with a small group and grow steadily. Another limitation is that chamas do not maintain proper records. As a result, the study period was only one year.

5.6 Recommendation for Further Studies

This study supports the argument by Brinson et al. (1991) that there are other minor determinants of financial performance. Previous studies have highlighted the importance of selecting a management team that can deliver higher risk adjusted returns on investment but little is known about the significance of the manager selection process in portfolio performance. Future researchers can introduce the management selection process as an independent variable to determine whether it is significant. Kenya Association of Investment Groups (2016) highlights that there are two ownership structures in a group: the equal ownership system and the unit valuation system. Each of these structures has challenges that may affect the operations of a group. This may ultimately have an effect on the portfolio performance of investment groups. Future researchers can also introduce ownership structure as an independent variable and test the effect of ownership structure of a group on the portfolio performance of investment groups. Liu (2005) argues that most studies on the determinants of portfolio performance have been concentrated in developed countries and that this limits the opportunity to generalize results as the asset allocation policies and active management decisions of the management teams of investment groups vary globally. Given the significant role investment performs in maintaining development of any nation, and the recognition of the growth of Chamas into financial machines that have initiated multi-billion-shilling projects in various sectors of an economy, future researchers can also replicate the study in other developing countries in a similar context to test the accuracy of the findings of this study.

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APPENDICES

Appendix I

Research Questionnaire

Strathmore University,

School of Management and Commerce,

Adm. 049038

Dear Sir/Madam,

REF: Request to participate in research questionnaire on "DETERMINANTS OF PORTFOLIO PERFORMANCE OF INVESTMENT GROUPS IN NAIROBI COUNTY OF KENYA"

The study seeks to examine the determinants of portfolio performance of investment groups in Nairobi County of Kenya. Management perception of the effect of several determinants such as asset allocation policy, market timing, and security selection, gender composition of the management team and size of membership is sought since many chamas that are not thriving collapse within their first year of operation in Kenya.

Your Chama has been selected for this study as it is registered with the Kenya Association of Investment Groups (KAIG) and is focused on meeting the financial goals of the group.

Please assign a member of your group in the **top management**, who makes decisions and is directly involved in choosing investment options in your investment club, to answer this questionnaire. Your participation is highly valued and will make a valuable contribution to the development of Chamas in Kenya.

Yours sincerely,

Eric Muthoka.

Appendix II

Questionnaire

Section A: General Information

1. Name of investment group ……..

2. Designation ……

3. Form of registration of your investment group

a) Support groups ( )

b) Society/ SACCO ( )

c) Community Based Organization ( )

d) Partnerships ( )

e) Limited liability company ( )

4. Number of years of operation of your investment group

a) Less than 1 year ( )

(b) 1 – 2 years ( )

(c) 2 – 3 years ( )

(d) 4 – 5 years ( )

(e) 5 years and above ( )

5. Size of membership of your investment group

(a) 2 to 10 members ( )

(b) 11 – 20 members ( )

(c) Above 20 members ( )

6. Gender composition of the management team of your investment group

a) Number of male members in the management team ( )

b) Number of female members in the management team ( )

Section B: Portfolio Holdings Preference of Investment Groups in Nairobi County of Kenya

7. Please indicate your response to the following questions by ticking the appropriate corresponding choice.

1= Never, 2= Rarely, 3 = Sometimes, 4 = Often, 5 = Always

	1	2	3	4	5
To what extent does your investment club consider fixed-income securities to be an ideal investment?					
To what extent does your investment club consider common stock to be an ideal investment?					
To what extent does your investment club consider mutual funds to be an ideal investment?					
To what extent does your investment club consider real estate to be an ideal investment?					
To what extent does your investment club consider derivatives to be an ideal investment?					
To what extent does your investment club consider farming to be an ideal investment?					
To what extent does your investment club consider jewellery and art work to be an ideal investment?					
To what extent does your investment club consider business to be an ideal investment?					

Section C: Portfolio Performance of Investment Groups (Chamas) in Nairobi County of Kenya

8. Please indicate your investment group's actual weight for each asset class for the year 2016.

Asset class	**Actual weight 2016**
Stocks	
Fixed Interest	
Cash and cash equivalents	
Real estate	
Offshore Products	

9. Please indicate your investment group's actual return for each asset class for the year 2016

Asset class	**Actual return 2016**
Stocks	
Fixed Interest	
Cash and cash equivalents	
Real estate	
Offshore Products	

Section C: Determinants of portfolio performance of investment groups in Nairobi County of Kenya

10. As laid out in your investment policy, please indicate the passive (predetermined) weight for each asset class for 2016.

Asset class	**Passive weight 2016**
Stocks	
Fixed Interest	
Cash and cash equivalents	

Real estate	
Offshore Products	

11. As laid out in your investment policy, please indicate your benchmark return for each asset class for 2016.

Asset class	**Passive return 2016**
Stocks	
Fixed Interest	
Cash and cash equivalents	
Real estate	
Offshore Products	

Please indicate whether you agree or disagree with the following statement. (√) in the appropriate space

10. A fixed asset allocation policy yields better portfolio returns than a variable asset allocation policy in your investment group.

1) Strongly disagree ( ) (4) Agree ( )

2) Disagree ( ) (5) Strongly agree ( )

3) Neither agree nor disagree ( )

11. Active management can yield better portfolio returns than a static asset allocation policy in your investment group.

1) Strongly disagree ( ) (4) Agree ( )

2) Disagree ( ) (5) Strongly agree ( )

3) Neither agree nor disagree ( )

12. A male dominated management team can yield better returns than a female dominated management team in your investment group.

1) Strongly disagree	( )	(4) Agree	( )
2) Disagree	( )	(5) Strongly agree	( )
3) Neither agree nor disagree	( )		

13. Large investment groups have the expertise required to earn better portfolio returns than small investment groups.

1) Strongly disagree	( )	(4) Agree	( )
2) Disagree	( )	(5) Strongly agree	( )
3) Neither agree nor disagree	( )		

Appendix III

List of Investment Groups registered with Kenya Association of Investment Groups as of February 2017

TARGET POPULATION
1. Boresha Maisha Self Help Group
2. Boma Women Group
3. Nabikobo Village Youth Bunge
4. Maemas Youth Bunge
5. Matendo Women Group
6. Job Bridge Youth Bunge
7. Majengo Youth Group
8. Nyorotisa Youth Bunge
9. Lugulua Youth Bunge
10. Ushindi Youth Group
11. Milimani C Youth Bunge
12. Upendo Salaams Club Self Help Group
13. Joyful Women Group
14. Abene Unity Self Help Group
15. Life Partners Investment Group Kenya
16. Imperial Quest
17. Vipepeo Investments Limited
18. Insight Investments Limited
19. Athi Boys
20. Rubie Fortis
21. Synergia Investments
22. Weleven Women Group
23. Wallace Five Limited
24. Visionary Investments Ltd
25. Thibiz Partnership
26. The Investor Network
27. Third Alternative Investment Ltd
28. Shangwe Investments Ltd
29. New Era Self Help Group
30. Mbarets Investments
31. Maboiz Association
32. Wosia Ventures Limited
33. Mali Rasili Ltd
34. Consolidated Securities Ltd

35. Bridge Investment Group Ltd
36. Cayenne Limited
37. Avec Investment Ltd
38. Dolphin Ventures 2006 Ltd
39. Widows Own Group
40. Wenzo Limited
41. Wealth Creators (2010) Kenya
42. UPL Ltd
43. Trans Millenium Investment Group Ltd
44. Mayfair Rubies
45. Mapato Investment Ltd
46. Manifest Destiny Limited
47. Lads Investment Ltd
48. Laibon Ninety Three Limited
49. La Palm Limited
50. Kweoya Investments Ltd
51. Kazole Ltd
52. Kenya Women Investment Company Ltd
53. Impala Chama Limited
54. Gufi Company
55. Greater Heights Investments Ltd
56. Futures Investments Ltd
57. Exemplar Limited
58. Exec Investment Group Ltd
59. Countvest Ltd
60. Capital Wide Investments Ltd
61. Critical Mass Growth Ltd (CMG)
62. Confer Limited
63. Carling Enterprises
64. Vipepeo Investments Limited
65. Umeme Pamoja Ltd
66. Siam Investment Ltd
67. Mhasibu Investment Company Ltd
68. Shabaha Sorority Limited
69. Ram Links Limited
70. Milele Alliance Ltd
71. Manifest Destiny Limited
72. Pavima Enterprises
73. Ngara Self Help Group

74. Niinue Nikuunue Women Group
75. Nyakwerigeria Women Group
76. All stars Self Help Group
77. Simameni Women Group
78. Fadema Enterprises
79. Mukuru Fuata Youth Association
80. Green Buffalo Youth Group
81. Innovation Self Help Group
82. Give Life Chance youth group
83. Mbele Daima Youth Group
84. Nairobi South Youth Group
85. Viwandani Progressive Youth Group (VPYG)
86. Aoko Road Traders Association
87. Bismilahi Youth Groups
88. Comma Youth Bunge
89. Island Youth Bunge
90.Commercial Kaverera Youth Association (COKAYA)
91. Umoja Moja Youth Association
92. Jubilant Youth Group
93. South B Mosque Youth Group
94. South B Wise Ladies Youth Group
95. Jitegemee Kenya Pamoja Youth Association
96. JKP YOMO Youth Group
97. JKP Enterprises
98. Lower Pangani Youth Group
99. Mission of Hope Youth Group
100. Muthurwa youth Group
101. Kayaba Nisisi Youth Association (KAYA)
102. Mandazi One Youth Bunge
103. Uprising Youth Group
104. Taliban Youth Group
105. Mola Kala Youth Group
106. County Youth Group
107. Simama Imara Youth Group
108. Bedjos Youth Group
109. Jamii Bora Youth Group
110. Pavima Enterprises
111. Ngara Self Help Group
112. United Youth Bunge

113. Huruma Youth Group
114. Karanjo youth group
115. Nyakwerigeria Women Group
116. Nairobi South Youth Network
117. Sinai Reli Youth Group
118. Makadara Youth Network
119. Amusha Youth Organization (AYO)
120. Talent Search Youth Association
121. Rauka Youth Bunge
122. Peer Educators Youth Group
123. Innovators Youth Group
124. Ngei One Youth Group
125. Seven Lions youth group
126. Fanaka youth group
127. Amazon Youth Group
128. Amusha Youth Organization
129. Makadara Youth Network
130. Gove Youth group
131. Fanatic youth Group
132. Ngado Youth Group
133. Kisa Self Help Group
134. Kariokor Youth Group.
135. Kariokor Leather Self Help Group
136. Kiamaiko Youth Group
137. Basha youth group
138. Badilika youth group
139. Riverside Self Help Group
140. Fezzo Flames Enterprises
141. Blackmamba Self Help Group
142. Kaloleni Women Group
143. Larry King Enterprises
144. Hazina Women Group
145. Jipange Self Help Group
146. Nemesio Enterprises
147. Nyando community based organization
148. Viwandani Comprehensive Community Based Organization

Source: Kenya Association of Investment Groups